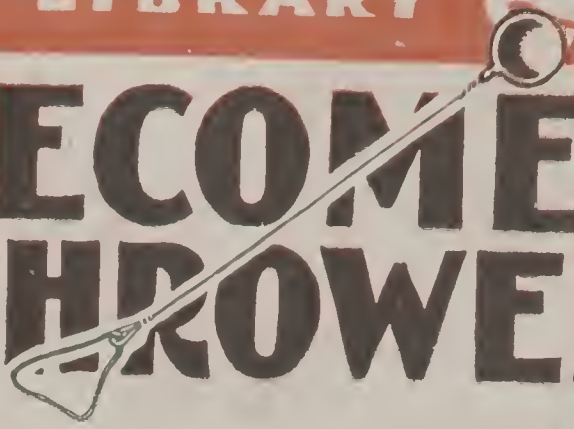


HOW ^{TO} BECOME A WEIGHT THROWER



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BY

JAMES S. MITCHELL



HAMMER
SHOT
56 LB. WEIGHT
DISCUS

WITH A CHAPTER
THROWING THE
JAVELIN



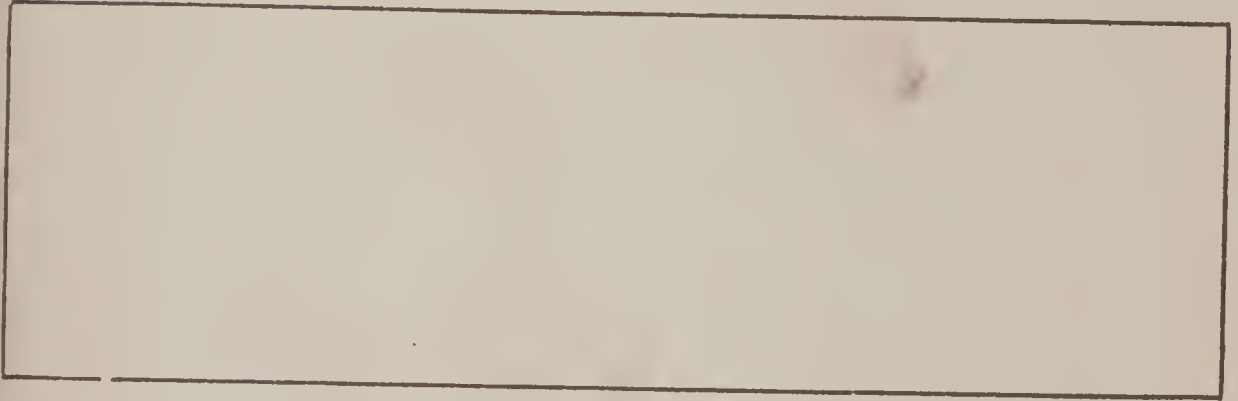


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JAMES S. MITCHEL.

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HOW TO BECOME A
**WEIGHT
THROWER**

BY
JAMES S. MITCHEL

WITH A CHAPTER ON THROWING THE
JAVELIN

PUBLISHED BY
AMERICAN SPORTS PUBLISHING
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Publishers' Notice

Attention is especially called to the chapter—which has never been published heretofore—on the development of the various implements, from the crude stage of their early and useful origin to the scientific missiles which, at least in the case of the “hammer,” retain their original nomenclature through courtesy and not by any resemblance to the tools to which they are indebted for their name. Probably there is no other person in the world to-day who has delved so thoroughly into the early history of hammer throwing than Mr. Mitchel, or has had the good fortune to have been not only a competitor in many of the successive stages of the development of the pastime, but in addition, has been able to glean at first hand, in the home of its origin—Ireland, England and Scotland—this information, which will be of interest not only to the followers of his favorite sport, but invaluable as data to the future historian of athletics.

AMERICAN SPORTS PUBLISHING CO.

James S. Mitchel

The following tribute to the author was written by the late James E. Sullivan for an earlier edition of this volume. Mr. Sullivan, who was the foremost authority on athletic matters for many years previous to his death, in 1914, repeatedly expressed his admiration for Mr. Mitchel's ability, not only as an athlete but as a student of athletic sport in general. Mr. Sullivan wrote:

"James S. Mitchel is, without question, a most notable man in athletics. He has had a long and active career—an honorable career—and was in competition longer than any other man in America and won more championships than any other athlete.

"To give in detail Champion Mitchel's entire athletic career would require a very large volume. He began in athletics as a sprint runner, and was recognized as a very good one. At various times he competed in other events, such as jumping, hurdle racing, etc., and finally began to specialize in weight throwing. His record proves how well he mastered the art. Mr. William B. Curtis, the "Father of American Amateur Athletics," remarked to the writer in 1891, on Manhattan Field, New York, that James S. Mitchel was the most remarkable weight thrower he ever 'clapped eyes on,' from the fact that he threw the hammer 145 feet from a seven-foot circle, and in that particular performance used but about one-half of the circle.

"At times Mr. Mitchel was prominent at shot putting. He may not have excelled at that branch as well as he did in hammer throwing, but was invariably around the top rung of the ladder. He has always asserted that as a

matter of fact a man who was a good weight thrower could not be an equally proficient shot putter, and vice-versa.

"Mr. Mitchel's researches into the history and general development of weight throwing have been exhaustive and his knowledge in regard to this branch of athletics is unequaled by anyone in the world. I trust that he will in the near future, as a matter of duty, commit to paper his unrivaled knowledge of everything that pertains to weight throwing, as it would be a misfortune to have his years of delving into history and records lost forever to posterity."

The following is a list of the principal championships won by James S. Mitchel during his long and active career as a competing athlete:

JAMES S. MITCHEL'S RECORD.

A. A. U. National Championships.

Throwing 16-lb. hammer—1889, 1890, 1891, 1892, 1893, 1894, 1895, 1896 and 1903.

Throwing 56-lb. weight for distance—1891, 1892, 1893, 1894, 1895, 1896, 1897, 1900, 1903 and 1905.

Throwing 56-lb. weight for height—1893.

A. A. U. Indoor Championships.

Throwing 56-lb. weight for height—1890, 1897, 1898 and 1906.

Putting 16-lb. shot—1897.

Throwing the discus—1897.

Metropolitan Association of the A. A. U. Championships.

Throwing 56-lb. weight—1889, 1890, 1891, 1892, 1893, 1894, 1895, 1896, 1897 and 1902.

Throwing 16-lb. hammer—1889, 1890, 1891, 1892, 1893, 1894, 1895 and 1896.

Putting 16-lb. shot—1895 and 1896.

N. A. A. A. A. Championship.

Throwing 56-lb. weight—1888.

Canadian Championships.

Throwing 16-lb. hammer—1890, 1892, 1894, 1895, 1896 and 1903.

Throwing 56-lb. weight—1889, 1890, 1891, 1892, 1894 and 1895.

Putting 16-lb. shot—1892.

Throwing the discus—1903.

English Championships.

Throwing 16-lb. hammer—1886, 1887 and 1888.

Putting 16-lb. shot—1886 and 1887.

Irish Championships, Gaelic A. A.

Throwing 16-lb. hammer—1885, 1886, 1887 and 1888.

Throwing 56-lb. weight—1885, 1886, 1887 and 1888.

Putting 16-lb. shot—1886, 1887 and 1888.

Throwing 7-lb. weight—1886, 1887 and 1888.

Putting 28-lb. weight—1887.

Throwing 14-lb. weight—1888.

Irish A. A. A. Championship.

Putting 16-lb. shot—1887.

Many of the present day ideas in the hammer and shot were modeled from suggestions advanced and tried out by Mr. Mitchel, and to his study of the weights and his remarkable athletic career is undoubtedly due the interest in this branch of track and field events in America.

Besides attending all the principal athletic meetings of the last quarter of a century, Mr.

Mitchel was also present as a member of the American team which swept all before it at Athens in the Olympic Games of 1906 and acted as special correspondent for the *New York Herald* at Stockholm in 1912, on the occasion of the last Olympic Games, where his advice was eagerly sought by not only the competitors but also high athletic authorities of European nations, who were then contemplating the establishment of athletic training under the patronage of their respective governments.

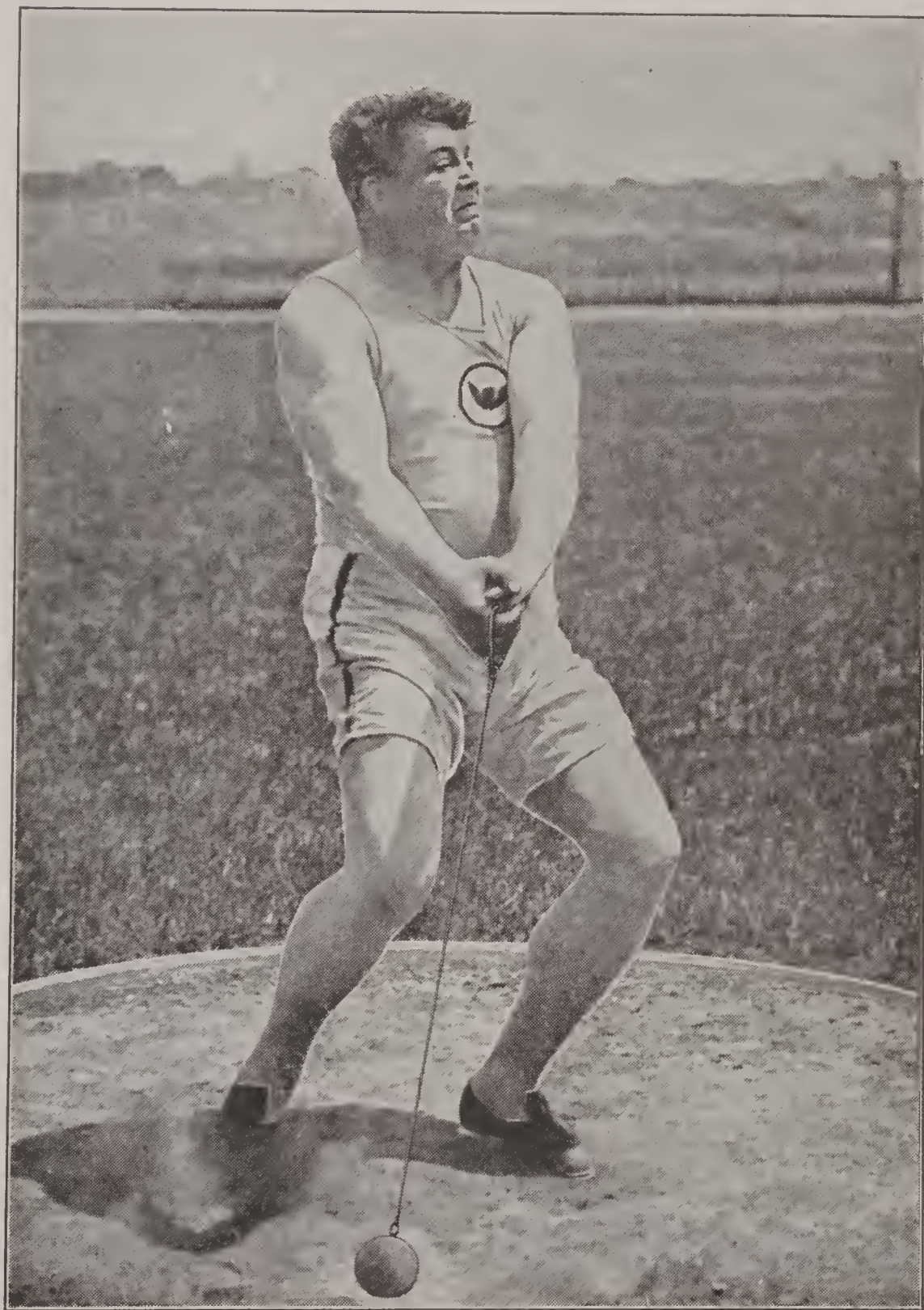


PAT RYAN.

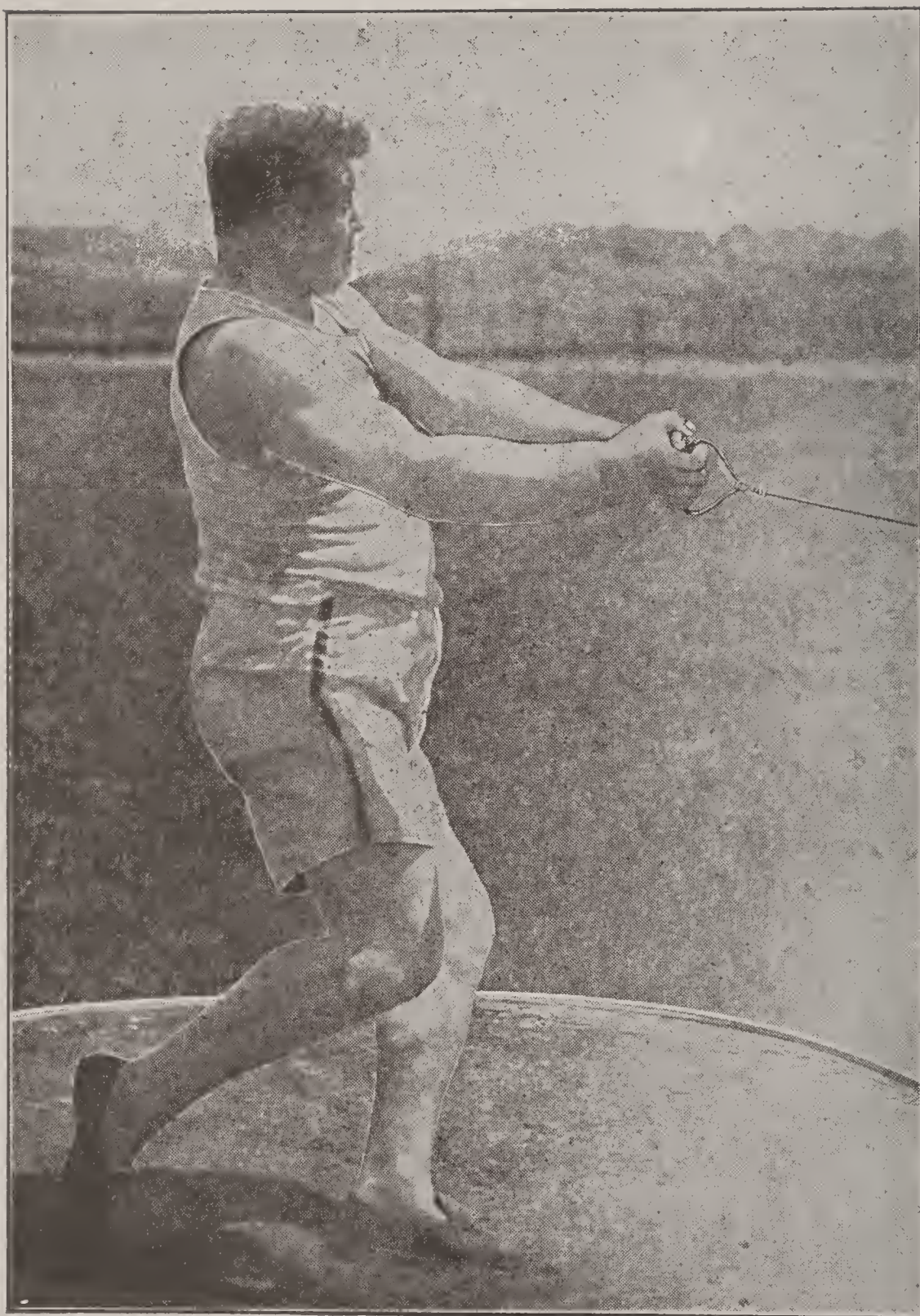
First position in hammer. Showing correct method of holding the hands.



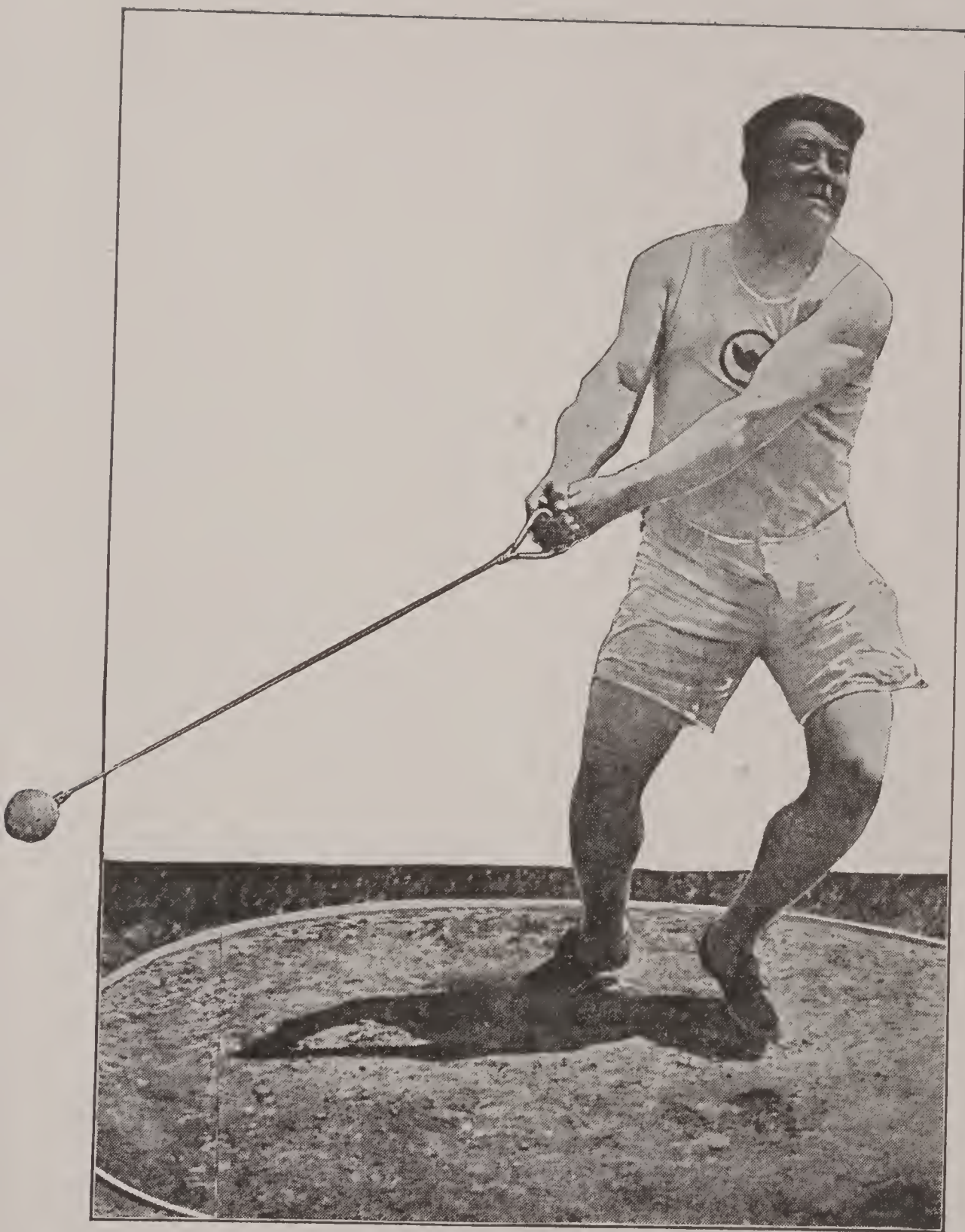
PAT RYAN.
Start of the first turn in the hammer.



PAT RYAN.
Position of body after first turn.



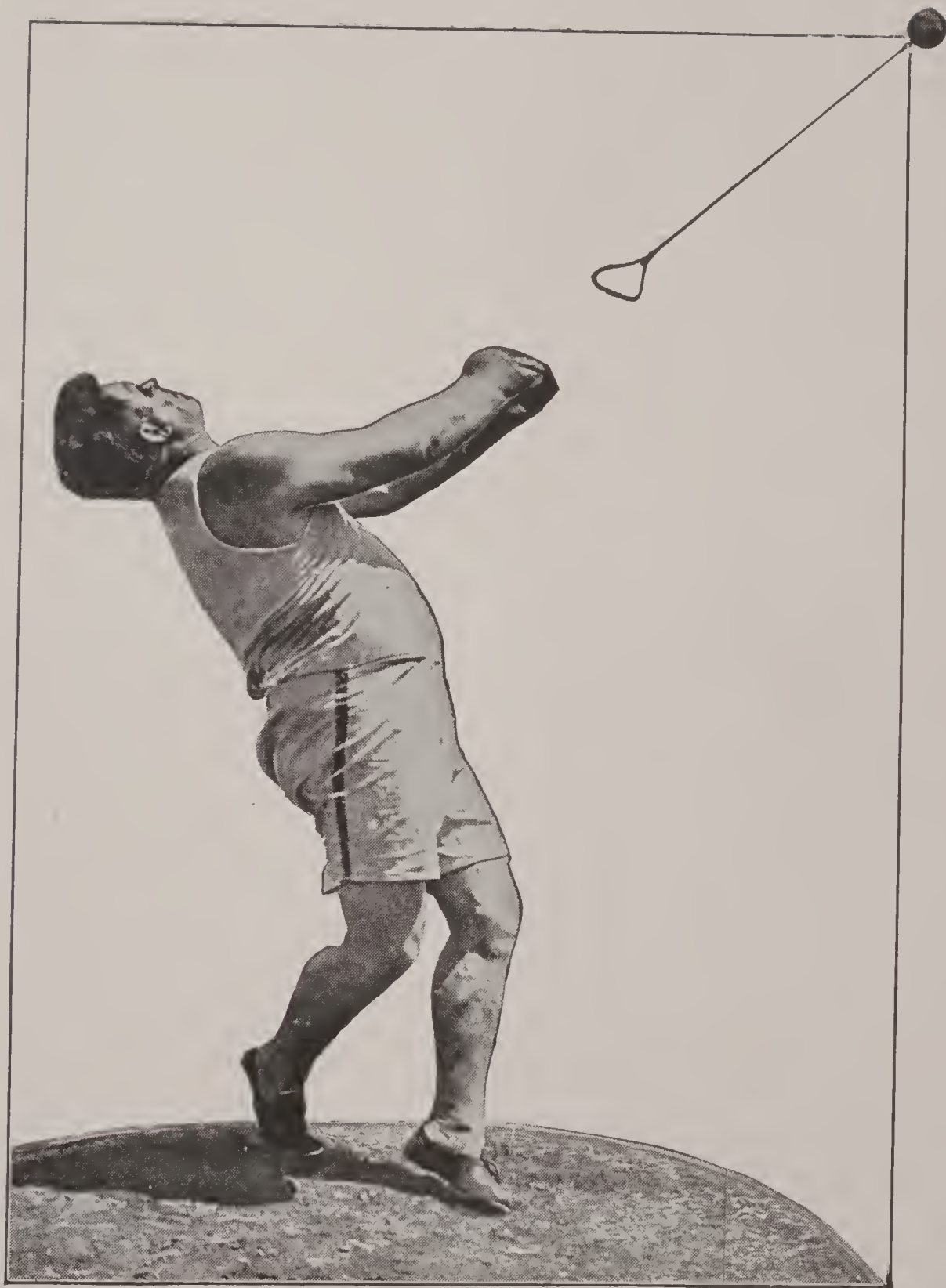
PAT RYAN.
Spinning on his left foot for the second turn of the hammer.



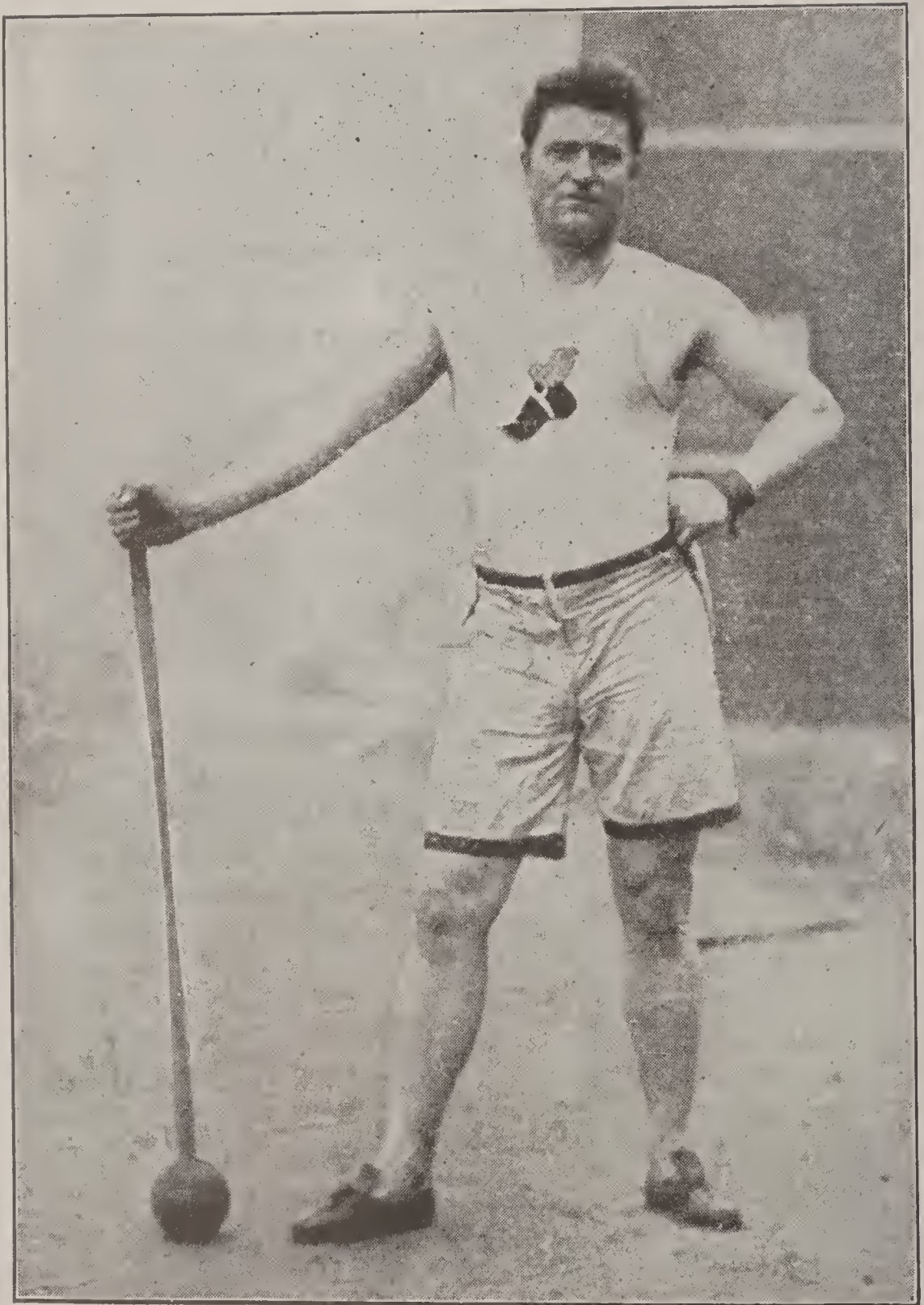
PAT RYAN.
Landing on second turn.



PAT RYAN.
In full swing on last turn.



PAT RYAN.
Delivery of hammer after three turns.



INTERNATIONAL HAMMER USED BEFORE ADVENT OF WIRE HANDLE.
This style was used by James S. Mitchel in the international New York A.C.-
London A.C. games at New York in 1895. The athlete in the picture is
Simon Gillis of the New York A.C.

Origin of Weight Throwing

It is now impossible to accurately ascertain at what particular period men began to throw weights in a competitive form. Probably the first contests occurred when the rude inhabitants of the primeval forests sallied forth with a sling-stone to chase the wild boar. No doubt, in due course, when the ancient hunters tired of the novelty of the chase, they would engage each other in a test to learn who could pitch his sling the furthest. But, whether or not this supposition is correct, it is certain that games of stone putting, javelin throwing, hammer and discus throwing are very old forms of athletic sport, and date back centuries anterior to the Christian era.

The first authentic mention of stone putting and hammer throwing appears in the "Book of Leinster" in connection with the Tailtin games, inaugurated in Ireland A. M. 3370, or exactly 1,829 years before the birth of Christ.

As these games were instituted 600 years prior to the first Olympiad, the Greeks are therefore indebted to the early Irish for the idea of the Hellenic carnival. In the Tailtin programme throwing the hammer was termed the *roth cleas*, which means wheel feat, and the first great champion was Cuhullian, who excelled all the men of his time, A. M. 5099; and, fortunately, perhaps,

for the self-esteem of his latest emulators, the exact records of this antique celebrity remain in oblivion. Putting the stone, the parent of all forms of shot putting, was a popular event of the ancient programme, and through centuries of turmoil and strife remained a favorite pastime of the Celt. Scotland, too, has been a prolific nursery for noted stone putters, and there is perhaps no more charming stanza in Scott's idyllic poem, "The Lady of the Lake," than where the giant

"Douglas rent an earth-fast stone
From its deep bed, then heaved it high,
And sent the fragment through the sky,
A rood beyond the farthest mark;—
And still in Stirling's royal park,
The grey-haired sires who knew the past,
To strangers point the Douglas-cast,
And moralize on the decay
Of Scottish strength in modern day."

However, a time came when men began to eschew the granite offspring snatched from the rugged bosom of nature for the metal sphere now generally in use. This permanent adoption of the shot was suggested by its popularity as a missile at the games of the various military organizations which had always access to a *recherché* assortment of cannon balls and shells, admirably adapted for the purpose, and the boorish boulder was thenceforth relegated to the placid though slightly sedentary occupation of gathering moss.

During the transition period the weight of the

shot was regulated to suit the versatile fancies of the different games committees, but the necessity of more uniformity was making itself felt in proper quarters, for in the annual "College Races" of Dublin University, in 1860, an iron 16-pound shot was used. Sometimes the 16-pound shot has been termed a weight, for the reason that in the old table of weights and measures 16 pounds was classed a "weight," and 14 pounds a "stone," while the "56" had its origin from being a fraction—one-fortieth—of the "long ton" of 2240 pounds. In the Oxford and Cambridge and English championship programmes of 1866 the iron shot was used for the first time. When the New York Athletic Club was founded, in 1868, by the late William B. Curtis and a few of his associates, almost the first items purchased were an iron shot, hammer and a square iron 56-pound weight, with a round ring; and pictures of these curios are to be seen among the early pictures of "Winged Foot" athletics. Originally the 56-pound weight was pushed from the shoulder, but in time men became dissatisfied with small throws and they began to swing it with a ring or hook and longer throws as the result.

From being swung between the legs the style was changed to a swing around, with unlimited run and follow, and seemingly phenomenal distances were made. Then the two-hand throwing from the seven-foot circle was introduced, and the latest innovation is a double turn, which is bound

to remain the desideratum of prospective champions for future time.

The hammer underwent some transformation, too, from the old iron head with stiff spade-tree handle to the lead head with piano wire handle and a loop at the extreme end for the hands.

Discus throwing was introduced in America in 1896, and is a typical Grecian sport. Throwing the javelin, which first received international recognition at the Olympic Games at Athens in 1906, was a showy and important event at the Olympiads at London in 1908 and Stockholm in 1912, has become a fixed competition in the Olympic programme and with the discus is listed in all the important championship events in America.

The object of this little volume is to give beginners some advice on their primary efforts when a professional or experienced coach is not available. The suggestions offered could doubtless be clothed in a more copious style and with more grandiloquent detail, but in treating the rudiments of any particular sport it is advisable that the treatise be plain and therefore the instructions have been made as concise as possible without, however, sacrificing information to brevity. The briefer the admonition the more easy will it be to memorize the vital points.

Development in the Weights and Discus

The shot, hammer, 56-pound weight and discus have undergone such change from time to time that it is a rather onerous task to unravel the long skein of variations that have occurred both in the implements and throwing rules. Of course, this is not to be wondered at when it is remembered that the varied forms of indulgence cover hundreds of years, especially in connection with the shot, discus, javelin and hammer. Stone putting is the parent of the shot and chariot-wheel twisting is the ancestor of the hammer, and while the discus itself is much the same, throwing rules are entirely different. Today the discus is made of wood shod with iron, while in the olden times it was made of either bronze or copper or iron. The writer once had the pleasure of seeing the most ancient specimen of the discus extant, and it is a pity that the one of the present day is not modeled after it. The specimen is in the museum at Munich and the foremost antiquarians agree that it is two thousand years old. It is made of bronze, is about eight inches in diameter, and weighs just a trifle under four pounds. It was found while excavations were being made at Ægina.

The hammer may be said to have emerged from

its rude state when the use of iron became popular. Then in the old world the forges sprang up through the rural districts, and heavy hammers were indispensable for the working of iron. Nothing was more convenient than to send to the forge for a big striking sledge when two men challenged each other for an impromptu contest. In the very early athletic games a blacksmith's sledge was used, and even in the reports of athletic meetings of forty years ago the event was styled "throwing the *sledge*" and not the hammer.

The elongated shape of the old sledge caused the handle to break so often that those who followed the sport began to look around for a substitute which would land with less jar on the ground. Ruminating on the subject was bound to produce some good fruit, and in due course a "turned" hammer of wrought iron made its appearance. The length of the handle was then what was known as "hip high," or 3 feet 6 inches. The old drawing of a Highland gathering made fifty years ago represents the hammer with its 3 feet 6 inches handle.

Not alone was the hammer itself peculiar, but a still stranger rule of throwing was prevalent. One of the opponents crossed two hammers and the man throwing had to keep the left foot inside those, while he hurtled the hammer away. This was the origin of throwing from a stand, a style

which was afterward modified so that the athlete could stand behind a scratch line.

Meantime, in other parts of the world, such as England and Ireland, the devotees of the sport were throwing in the old style, that is, the "figure eight," with one hand. In manipulating this method the thrower stood at the mark and wound the hammer in front and behind until he felt that he had gathered force enough, when with a bound he swung clean around and let the hammer fly.

Crude as the plan might appear, some very fine throws were accomplished, and marks are still pointed out which make some of the modern giants gasp in awe. One of the most noteworthy is said to have taken place at the castle of Oola, County Limerick, Ireland, where a gigantic priest named Eliv Hanley engaged in a special match with an army officer stationed at Limerick. The conditions called for the highest throw against the walls of the tower, which is about 100 feet high. Not only did the cleric win, but he threw the hammer clean over the tower, and it has not been seen since. Superstitious residents of the district have it that the hammer sailed clean into the clouds, but the more practical accept the theory that when the hammer fell on the soft boggy ground it easily sank below the surface. That the reverend athlete was a man of tremendous power there is no doubt, for the gossips have it that

when he swung round in the throw, he wrenched off the heels of a new pair of shoes he wore.

The next step toward advancement was the introduction of throwing with unlimited run and follow, and immediately a number showed proficiency by making two, three and four turns, and what might be termed respectable performances nowadays were recorded. Nobody then thought of whirling the hammer around his head before executing the body spin, although that style had been introduced in 1867 or thereabout by Donald Dinnie, the Scotch professional. The amateurs contented themselves with holding the hammer out at arm's length, letting it drop down behind, after which they began to spin around. Soon afterward, however, and one by one, they began to wind the missile over the head, and at once the improvement in distance was noticeable.

One of the first to show his appreciation of the innovation was C. H. Hales of Cambridge University, who, in 1874, threw the 16-pound hammer, with a handle considerably more than four feet, a distance of 138 feet 4 inches. Hales turned four times when he made the record, but to spin that number of times was only mere boy's play, for it is said that he could make six turns as easily as four.

No very strict rules were enforced as yet as to the length of the hammer, as is evident from the fact that one of the competitors in the interna-

tional match between England and Ireland crossed the channel with a hammer the handle of which measured six feet in length, and the spectators were treated to a real novelty, for a trench had to be dug in front of the thrower so that he could swing the hammer without striking the ground. The extra leverage availed him but little, for Maurice Davin, the Irish champion, sawed off 2 feet 6 inches from the Englishman's hammer and beat him easily. It is worth while to mention here that this international meet was the first of its kind in the history of athletics, and took place at Lansdowne Road, Dublin, in 1876, and it is not amiss to give a few words here about Maurice Davin, who, at the time that this book was written, was still alive and hearty, at the age of seventy-three.

Mr. Davin was regarded as one of the most scientific performers of his time. He threw with one hand, and in 1880 sent the 3-foot-6 hammer with the old stick handle and iron head the remarkable distance of 131 feet. Using the same kind of a hammer, he did 110 feet from the 7-foot circle, and the mark was then the world's record. When Mr. Davin made this record he made two turns in the circle, and this was the initial attempt at double spinning inside the 7-foot enclosure.

Throwing with unlimited run and follow continued both in England and Ireland until 1876,

when the 7-foot circle was officially adopted in England, and it continued to 1887, when the circle was enlarged to 9 feet. Another change came with the Fourth Olympiad, held at London in 1908, when the Englishmen went back to the 7-foot ring again. Previous to 1896 only the wooden handle and iron head was tolerated, but after that there were leaden heads and subsequently the American loops of all sorts. That the Englishmen are sticklers for their rules and customs is shown in the photo of Simon P. Gillis, holding the old-style hammer. This was the identical implement used in the international match between the New York A. C. and the London A. C. in 1895 and consisted of a wooden handle and iron head.

In 1885 Dr. W. J. M. Barry, of the Queens College, Cork, introduced the first radical departure from the wooden handle by substituting a Malacca cane shaft. It was a capital arrangement, but as the "canes" broke easily, the expense prevented their universal popularity. Dr. Barry won American, English, Irish and Canadian championships.

At the dawn of amateur athletics in America, in 1868, those who had the task of formulating the hammer rules followed the lead of the Caledonians by throwing a stiff-handled hammer from stand, and it remained unaltered until 1888. For a number of years the late "Father Bill" Curtis,

the first American amateur champion with the hammer, kept a 21-pound hammer with a stiff wooden handle in his office. He said one day in answer to a query that it was a "souvenir" of the past. The leaden head made its appearance early in the '80s and with it came all sorts of springy handles to the limit of which the rules would admit. Naturally enough, the hard ground played havoc with the frail wood handles and athletes were at their wits' end to find some tough wood that would stand the wear and tear for at least a couple of days at a time. Every species of wood known to the modern turner was experimented with until the late Mike O'Sullivan of New York, the all-around champion of 1892, hit upon a novel idea. He visited Van Cortlandt Park one day and gathered a bundle of grapevines, which he converted into handles, and they answered the purpose so well that they were in vogue until the writer introduced the steel wire with a wooden loop at the end in 1892. The grapevine was a zigzag, clumsy-looking affair, yet it stood a surprising amount of hardship and only split and flittered to pieces when it got too dry from exposure to the sun.

Some humorous incidents developed over the use of the grapevine. In competition the versatile Mike used only one hand, and he appeared at Travers Island on one occasion with a grapevine turned at the end like a walking stick and it

had half a dozen crinkles which, when stretched out in the act of throwing, made the hammer look to be at least six feet. The late "Father Bill" Curtis was attracted by Mike's hammer and, to satisfy himself that the rules were observed, measured it, and found it to be nothing over the regulation four feet, but he said that to look at it from the opposite side of the field it appeared to be fifteen feet when Mike was swinging around. "Ah, sure, Mr. Curtis, you can measure it when I'm throwing if you like," answered Mike to the insinuation of unfairness. The invitation to put a tape line on a flying hammer was too much for the pioneer of American athletics, and he walked away in the direction of the running broad jump. Wilson L. Coudon of Elkton, Md., the national champion with the 56-pound weight in 1888, introduced the walking-stick handle, which he used with success for a number of years.

A radical clause passed by the A. A. U. in the winter of 1891, which rendered it possible that the hammer head and handle could be of any shape and of any material, at once gave scope for a string of oddly shaped handles. Mike O'Sullivan was in evidence at once with a steel loop and a piece of sash-cord, and, as he usually strolled into the grounds dragging the hammer behind him, the wags after a while called it "Mike's bulldog." The writer tried a cross-bar on the wooden spool, but it broke so often that he laid it aside and went back to the old wooden spool and steel wire.

That class of handle remained in use until 1898, when the bifurcated loop and piano wire attachment was evolved.

Of course, the "Mitchel handle" was the basis of some chaff, but it was soon apparent to the contestants that the leverage was increased about eight inches and, besides, an athlete had a fine, firm grip at the extreme end of the so-called handle. The loops have held their own to this day, and although the single loop with the hands overlapped has come along, the bifurcated loops still retain a number of adherents who are strong in the belief that they are the best ever. In connection with them there is one certainty, and that is, they are the best of all for a beginner.

For about a dozen years, beginning with the advent of the present century, there was a partial craze among the weight men to secure the smallest hammer-head possible, one which would offer the least resistance to the atmosphere. The manager of one of the college track teams easily solved the problem as to these requirements one day after a visit to the United States Treasury, where he inquired the cost and diameter of a gold 16-pound hammer. The size suited him, as the sphere would not be much larger than a billiard ball, but the cost stunned him, and he walked away saying that he would lay the matter before the officials of his college who had charge of the finances. The Treasury Department never got the order for the gold hammer.

The best attempt at securing the minimum dimensions for the 16 pounds was the invention of Simon P. Gillis of New York, who constructed a steel shell filled with mercury, and it was arranged with a couple of extra cells in case the mercury expanded with the heat. This combination sphere was much smaller than the lead and would no doubt be in vogue more or less, but the rules called for a metal hammer, and as mercury could not be classed under that heading the Gillis innovation went for nought. Hammer heads made of block tin, bronze and other alloys were tried, but as they were all found to be larger than the lead they scarcely outlived their initial appearance.

At various times some odd patterns of hammer handles made their appearance. A Western genius evolved a handle with a notch near the head, so constructed that when it flew away the handle unloosed from the notch instantly and the head traveled the remainder of its flight alone. The idea did not conform to the A. A. U. rules, which stipulate that the complete implement shall travel the entire journey. The plan of a double bar on the single loop found no favor among the experts, and neither did a large loop for the two hands, similar to the one used on the "56" of the present day.

To Alfred Plaw of California belongs the credit of first throwing with the single loop and overlap-

ping the hands, and unless the International Federation goes back to the original hammer, the single loop will be the hammer of the future.

The 56-pound weight was first included in the national championship programme in the United States in 1878, and until 1888 it was thrown from stand without follow.

That cycle partly covered the period of the existence of the old National A. A. A. A., and the longest throw on the list for twelve years was made by the writer after the visit of the Gaelic invasion team in 1888. The weight was then of iron, with a one-handed loop, but there was nothing in the rules to prevent an athlete from using the two hands if he so desired. Consequently the late A. A. Jordan, all-around champion in 1888, who was a close student of athletics, took advantage of the shortcoming, and in the special match he had with the late Malcolm W. Ford, startled the keen brigade of heavyweight men by introducing a sort of bias two-handed handle and a leaden weight. Two new things in one day; and they helped him to defeat Ford in the match which was held at the old grounds of the Brooklyn Athletic Club in the fall of 1889. Without much delay two-handed throwing became popular and remained so until the autumn of 1901, when John Flanagan developed the two turns and in much the same way as it is now practiced.

The two-handed handle met with some altera-

tion. At first it was a sort of hook, but there was a slight deviation when, in 1891, at Travers Island, Con Coughlin of the old Manhattan Athletic Club brought along a handle on the plan of ice tongs. Its chief peculiarity was a loop for each hand, but it was found to be too clumsy and was relegated to the scrap heap after a few trials. At the request of the late James E. Sullivan, the writer then, after much experimenting, designed the present loop with the link attachment to the head, and the verdict the world over is that there is hardly room for improvement. The weight as it is now was first seen in competition at the Olympic Games of 1904, at St. Louis.

In the old world the competition with the "56" was chiefly confined to Ireland and Scotland, England never catering to the big weight. It has never been included in the Scotch championship programme, but when it first received an official place on the Irish championship list it was thrown with unlimited run and follow, and, strangely enough, the competitors for years swung around backhanded.

This style remained unaltered until 1886, when the writer turned right-handed to the front and sent the 13-inch weight 34 feet 1 inch—then a world's record. The performance was noteworthy in another way, for the weight was swung around the head, it being the first exhibition of that particular style.



PAT McDONALD.

Poise of body at start of shot put, holding shot in left hand, from whence it is passed to the right.



PAT McDONALD.

Start of the shot put—availing himself of every inch of the circle preparatory to putting.

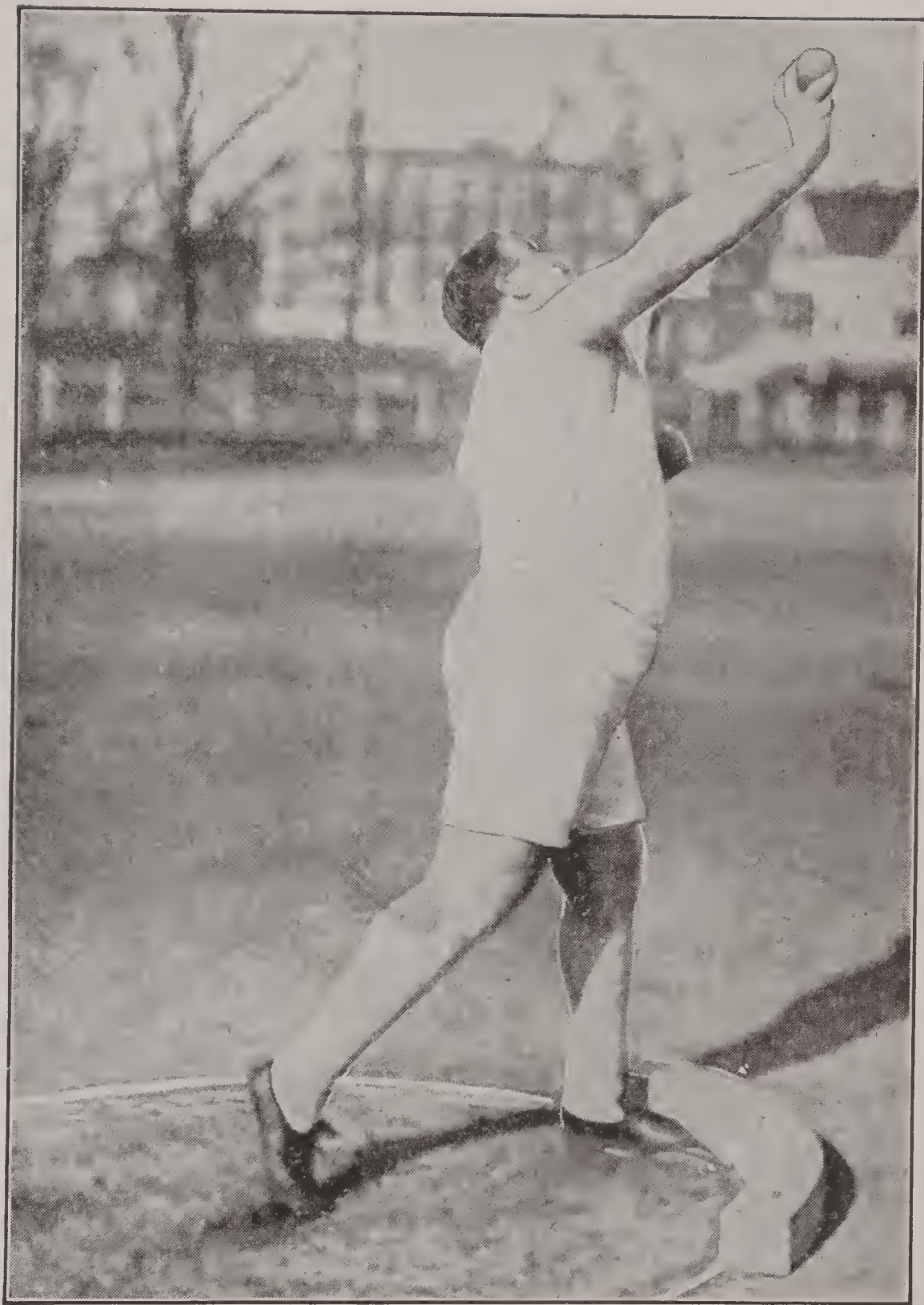


PAT McDONALD.

Position of the body and legs as he jumps to center of circle.



PAT McDONALD.
Beginning of the final drive of the arm.



PAT McDONALD.

The instant just before the shot was released, showing proper elevation of the arm.



PAT McDONALD.

Delivery of the shot. Showing terrific drive of arm and body.



TOM KIELY,
All-around champion of America (1904 and 1906) and Ireland.



MATT McGRATH.
Start of the "56." First turn.

In the '90s T. F. Kiely developed the double turn and did 38 feet 1 inch, a mark which is still the British record. For a while, in 1903, the writer practiced the double turn and succeeded in pitching the weight 38 feet 5 inches, which still holds its place as a world's record.

PUTTING THE SHOT.

The modern form of putting the shot is an offspring of the ancient exercise of putting the stone, of which there were two styles, that is, putting from stand and with unlimited run and follow. Fairs and other established festivals were the great occasions for the stone putting, and when the men took part in these contests they usually stripped to the waist. And there were times when they even rid themselves of their shoes and stockings in order to be lithe and active when throwing. In putting from stand the front mark was usually a piece of cord strung from two pegs and the run was two strides, that is, about seven feet. Throwing with unlimited run, the athlete took a run of about fifteen yards, and if he was a right-handed putter he put off the right foot and followed over the line with a drive.

THROWING THE DISCUS.

Archæologists and close students of Greek antiquities and history agree that originally the discus was thrown from a stand, and that at

various ages it was made of stone, wood, bronze, copper and iron. The sculptor Myron, who flourished 432 B. C., on account of being contemporaneous with the palmy days of the Olympiads, had a chance to watch the discus throwers in action, and consequently he depicted the athlete in his correct poise. Quintilian, the Latin critic, gives unquestionable evidence of the style in which the discus was thrown. From the early writings the information is gleaned that the thrower stood in a space called the "balbis," and stood with his right foot forward. He held the discus high above the head and, bending the body, brought the arm back and up behind until it was level with the head, as the left hand took a point of support at the knee. Then the athlete leaped forward, the discus arm describing a semicircle in a downward motion, and not a swing around the body.

At the 1896 revival of the Olympic Games at Athens these conditions were not observed, but the competitors threw from a 7-foot square. First place was pluckily won by Robert Garrett of Princeton University, who made a sort of hop-skip across the seven feet and executed a half swing of the arm around the body, and under the conditions made the fine throw of 95 feet 7½ inches. The Princeton man had only a few days to learn the game, for he never saw a discus before he landed in Greece.

The real rules were enforced in the games of

1906, but when the same style was given in the English Olympiad of 1908, there was no judge present who understood the rules and the men were allowed to use any arm action they pleased. The result caused some ill-feeling, especially among the Greeks, so the International Olympic Committee abolished throwing from stand altogether.

Throwing with a turn made its debut in 1898, the writer having the pleasure of introducing it in open competition. The occasion was the national indoor championships at Chicago, which took place in the Coliseum, and although it was an immense, roomy building, the writer, nevertheless, was in mortal fear lest the discus should slip from his hand and land in the gallery. The throw was only about one hundred feet. The 7-foot square prevailed, but about a year afterward it was changed to the 7-foot circle. The Greek 9-foot circle saw some use, but the International Amateur Athletic Federation, at its convention held in Lyons, France, in 1914, adopted the rule making the circle 8 feet 2½ inches (2.5 meters) in diameter. This rule was subsequently adopted by the Amateur Athletic Union of the United States.

Throwing the Hammer

There is no heavyweight exercise which requires greater activity for effective manipulation than throwing the hammer. To achieve anything like a record distance a man must not alone have strength and agility, but he must have a placid nerve, a cool head and all the confidence born of a conscious superiority. Of these qualities, confidence is the most essential, for it superinduces a certain rhythm of the muscular power at all times necessary. Of course, there is a particular knack which can best be explained by a skillful performer, but in case he is not to be had the student of the game would perhaps do well to follow the routine advanced here.

This method of throwing the missile is the one practiced by Pat Ryan, holder of the world's record, and for speed and style he cannot be very well excelled.

It may be as well to state at the beginning that no man ever sent the hammer as far with one turn as with two; that is, provided he had the proper plan of executing the double turn. For concise purpose, then, it is better to mention that the two turns is a method recommended to all beginners. Not a few have tried three turns with seeming success, but there is not such an advantage between three turns and two turns as be-

tween one and two; and, anyway, two turns inside the seven-foot circle without a foul generally taxes the activity of the most agile. It is only after a man has mastered the two turns that he should attempt the triple turn. In that case the first turn should be slow, as it serves only to get the body in motion for the two others, which should be fast. In fact, after the first spin the athlete can drive at the other two with all his might. From the instant the athlete starts the preparatory swing there should be one thing in his mind and that is, there should be always something left for a final sweep. It is the heave at the finish that makes all big throws.

The man wishing to devote his attention to the sport should first of all secure a serviceable hammer with wire handle and bifurcated loops, or the single loop. Ryan uses a Spalding No. 16BH championship hammer with ball bearing swivel. These loops should be of strong steel wire and should be of a texture that would not bend or sag. For extensive practice it is best to wear leather gloves or to wrap the loops with some soft substance, which will prevent their cutting into the fingers. After a while, when the hands become hardened, the wrapping and gloves could be dispensed with altogether.

Always, before commencing practice, it would be well to examine the wires and see that there is no sign of a break, for a misthrow or parting

of the head from the handle is one of the most discouraging features of the practice of the beginner.

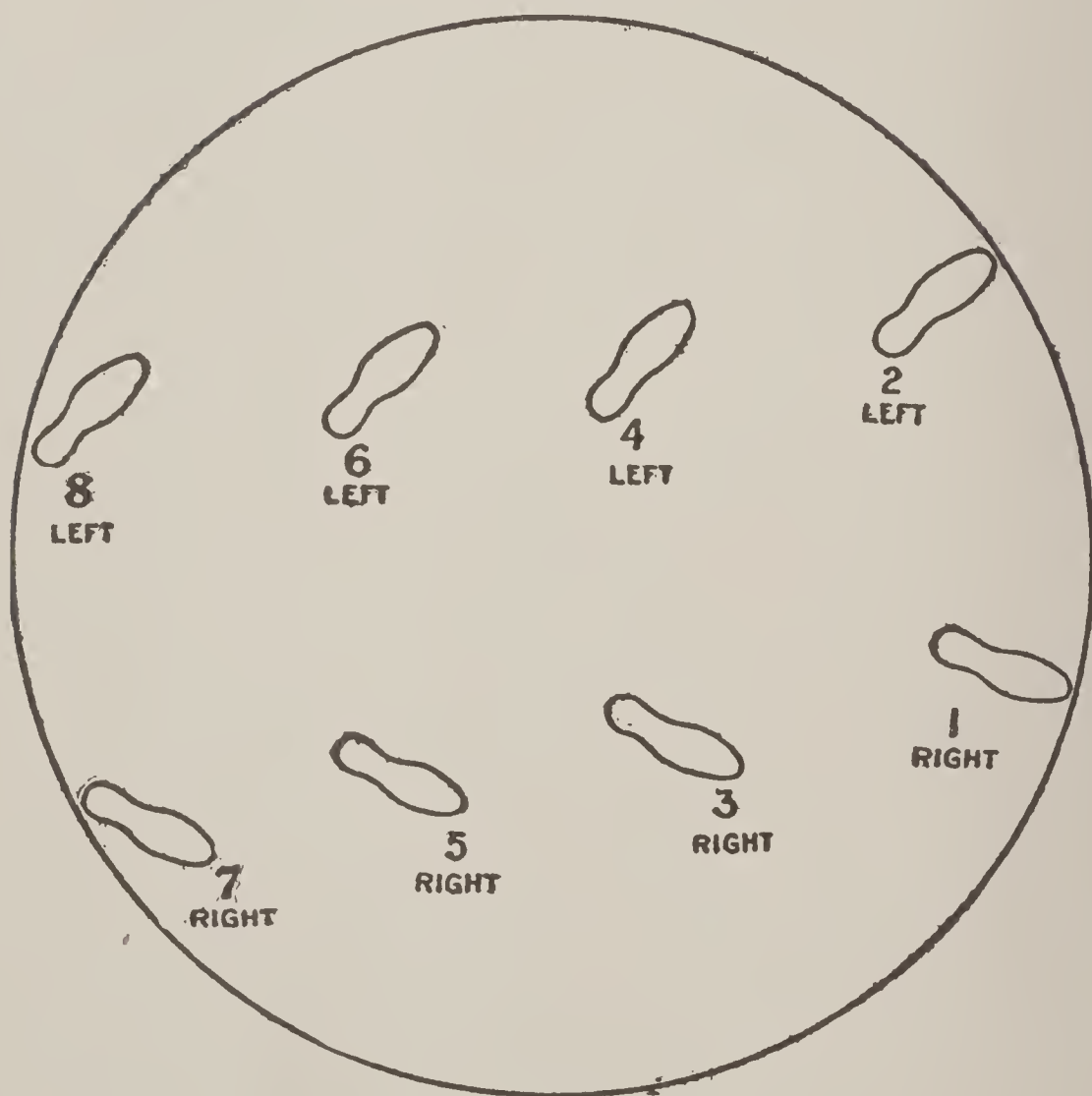
Before starting to swing the hammer around his head, which is the preliminary movement, the thrower should be sure of the position of his feet. He should stand at the top of the circle, with the right foot on Fig. 1 and the left on Fig. 2, at the opposite side from which he intends to throw.

The feet should be about two feet or so apart and with the toes of both almost touching the circle.

In swinging the hammer over the head, the arms should be held as straight out from the body as possible, so that the hammer handle and arms will resemble one and the same connecting rod with the body. As the hammer travels round the body, as much freedom as possible should be given the shoulders and the hands should swing well behind the head, thereby describing as large a circle as possible in the air. The secret of this is that considerable momentum is imparted to the flying ball with very little loss of vital force.

After two or three swings, when the thrower feels that he has acquired enough speed in the missile, let him heave his body off his toes, bringing the right leg clean around to Fig. 3 and to left to Fig. 4. This movement will bring the feet exactly behind their original position and further in on the circle, about halfway.

HAMMER THROWING DIAGRAM



Turn full around from 1—2 to 3—4, which is the first turn; then full around again, from 3—4 to 5—6, and the third time from 5—6 to 7—8.

To make the first turn effectively it is best that the hammer thrower should bring the hammer well in front of him before his feet leave the ground, as shown in the photo of Ryan at the start of the throw. The thrower should land on his toes on his first spin, and as near to the original position as possible. Then, for the purpose of balancing himself, he should make the slightest pause. The second and third turns should be made with all possible speed, at the same time reserving a trifle of his power for the final heave-off, which is one of the most essential points of a good throw.

One great fault with most men who are anxious to figure prominently with the hammer is that they get discouraged when they cannot accomplish a championship distance after a few weeks' practice. It takes time and trouble to be a successful ball player, foot baller, runner or jumper, and with the hammer the same way. Because a man does not throw well on his first attempt he should not abandon the exercise. If he falls when trying the turn, let him keep at it, and by persevering he will eventually learn the proper balance and speed, and this once gained, he will be on the high road to success. When John Flanagan, the former champion, first attempted to execute the double turn he stated that he fell flat on his back—upset by the force of his own momentum. But he stuck at it, tried again and again, went turn-

ing, twisting and wriggling all over a ten-acre field until, after about two weeks' hard work, he mastered the intricacy of the double evolution. Like the art of swimming, once attained, it stays with an athlete while he remains in active competition.

One thing a beginner should not forget and that is, that he cannot throw often enough at first. When he can reach 120 or 130 feet he need not work so hard, but the great secret at first is to *Throw*, *THROW*, *THROW*!

An idea gained ground some years ago that to be a successful hammer thrower a man had to be specially prepared like a prize fighter or six-day pedestrian. Such an idea is erroneous. Let a man eat plenty of wholesome food, but avoid stogy stuff, such as puddings, pastry and any food which will cause unnecessary strain on the digestive organs. A rubdown after a hard practice will keep the muscles limber and prevent soreness. This, added to his work with the hammer, a little attention to his general health and sleep, will form the entire routine of preparation for a hammer thrower.

A few points to be remembered:

Stand well up on the toes when throwing.

Make the turns as fast as possible, but be sure that the second and third are faster than the first.

Keep the mind centered on the effort.

Always be determined.

OFFICIAL A. A. U. RULES FOR ALL WEIGHT EVENTS.

RULE XXIII.—WEIGHT EVENTS.

1. In all weight events thrown from the circle, except Throwing the Heavy Weight for Height, the competitor must stay in the circle until his attempt is marked by an official.
2. In all weight events thrown from the circle, the competitor may touch the inside of the circle.
3. The circle shall be 7 feet (2.134 meters) in diameter for all weight events except Throwing the Discus, which shall be thrown from a circle 8 feet 2½ inches (2.5 meters) in diameter. The circle shall be measured from the inside, and in outdoor competitions shall be sunk almost flush with the ground. In indoor competitions the circle may be marked on the floor.

The brass shell, as on the Spalding "Official Olympic" hammer, No. 16BH, adopted by the International Amateur Athletic Federation in its congress at Lyons, France, in 1914, and subsequently adopted by the Amateur Athletic Union of the United States and the principal college governing bodies, is the invention of the late Michael C. Murphy, the famous University of Pennsylvania, Yale and Olympic track and field athletic trainer.

The idea of the brass filled shell, on both the hammer and shot, is to retain the spherical shape of the implement, which otherwise becomes dented and loses weight from continuous impact with the ground.

The specifications as adopted by the congress are as follows:

OFFICIAL SPECIFICATIONS FOR 16-POUND HAMMER.

Head.—The head shall be a brass shell filled with lead or cast gray iron and spherical in shape.

Handle.—The handle shall be a single unbroken straight length of spring steel wire not less than $\frac{1}{8}$ inch (3.175 millimeters) in diameter, or No. 36 piano wire, 0.102 inch (2.591 millimeters) in diameter. The handle may be looped at one or both ends as a means of attachment.

Grip.—The grip may be either of single or double loop construction, but must be rigid and without hinging joints of any kind.

Connections.—The handle shall be connected to the head by means of a swivel, which may be either plain or ball bearing. The grip shall be connected to the handle by means of a loop. A swivel may not be used.

Weight.—The weight shall be not less than 16 pounds (7.257 kilograms) complete, as thrown.

Length.—The length shall be not more than 4 feet (1.219 meters) complete, as thrown.

OFFICIAL A. A. U. RULE FOR HAMMER THROWING.

RULE XL.—THROWING THE HAMMER.

1. All throws to be valid throws must fall within a 90 degree sector marked on the ground.

2. A fair throw shall be where no part of the body of the competitor touches the ground outside the circle.

3. It shall also be a foul if the competitor steps on the

circle or leaves the circle before his throw has been marked.

4. Each competitor shall have three trial throws, and the best five shall have three more. Each competitor shall be credited with the best of all his throws.

5. The measurement of the throws shall be from the nearest edge of the first mark made by the head of the hammer to the inside circumference of the circle on a line from such mark made by the hammer to the center of circle.

6. Letting go of the hammer in an attempt, or touching the ground outside the circle with any portion of the body while the hammer is in hand, are foul throws, which shall not be measured but which shall count as throws.

7. In hammer throwing, if the hammer breaks while in the air, it shall not be considered a throw.

Training for the Hammer

BY PAT RYAN.

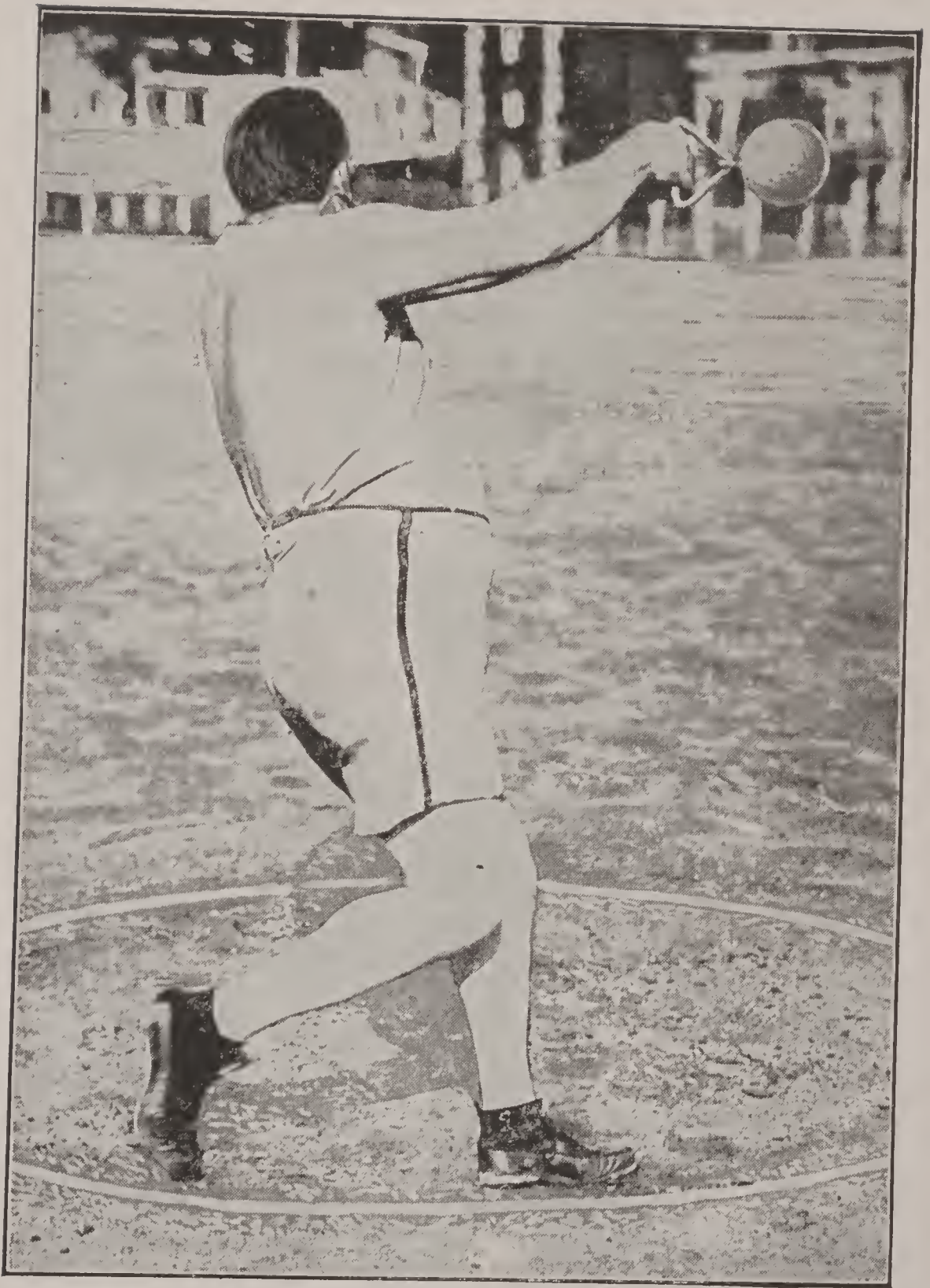
The balancing of the swings and the timing of the turns is the main secret of hammer throwing, and until a man can do these things fairly well he need never hope to get a really smooth throw or to make a big distance.

It has often been remarked that men who come from a certain section in Ireland have usually led the world in hammer throwing, and it has been hinted that there must be a secret which is passed from one to the other and of which the outside world can gain but little knowledge. There is a secret, of course, but as far as I remember nobody told me. I seemed to acquire it by degrees. Nobody told Flanagan and, as far as I could learn, Flanagan never told McGrath. Yet McGrath has it. It is hard to explain this peculiarity on paper and it is still harder to make a younger hammer thrower understand it.

The main hinge of the secret is to strike a medium between the too fast and the too slow swing of the hammer at the start. Some beginners at the game wind the hammer so fast in the preliminary swings over the head that they bury themselves into the ground, and when they start the first turn they have such force in the hammer that they are nearly carried off their feet and

they either fall down before the third turn is made or else the hammer flies away without the right force being applied at the finish. On the other hand, the too slow preliminary swing is nearly as bad, for the slow movement will not help the thrower to make the first spin and he has, as it were, to drag himself around for the first turn and is naturally all out of position for the next two turns. He has gathered no speed, his feet are in the wrong position, and perhaps his body is bent over from the exertion of trying to lunge himself around so that at the very commencement he is wrong and might as well abandon the try then and there. He will not be able to make the proper kind of a finish, for on the very last heave-off, if a man cannot get the lift of the body and the sweep of the arms, the hammer will not fly into the air and a big throw is impossible. There should be one thing before the man's mind, first, last, and all the time, and that is a vicious, snappy finish, with every ounce of weight working. Keen judges of the game tell me that I appear about half my natural size at the finish of my best throws. That suits me, for I know when I look like that I am getting in all my strength and pulling for every ounce of power in my body.

A man about to make a throw should swing the hammer over his head fairly fast, with the shoulders thrown back and the arms held straight out at full length. He should bring the hammer



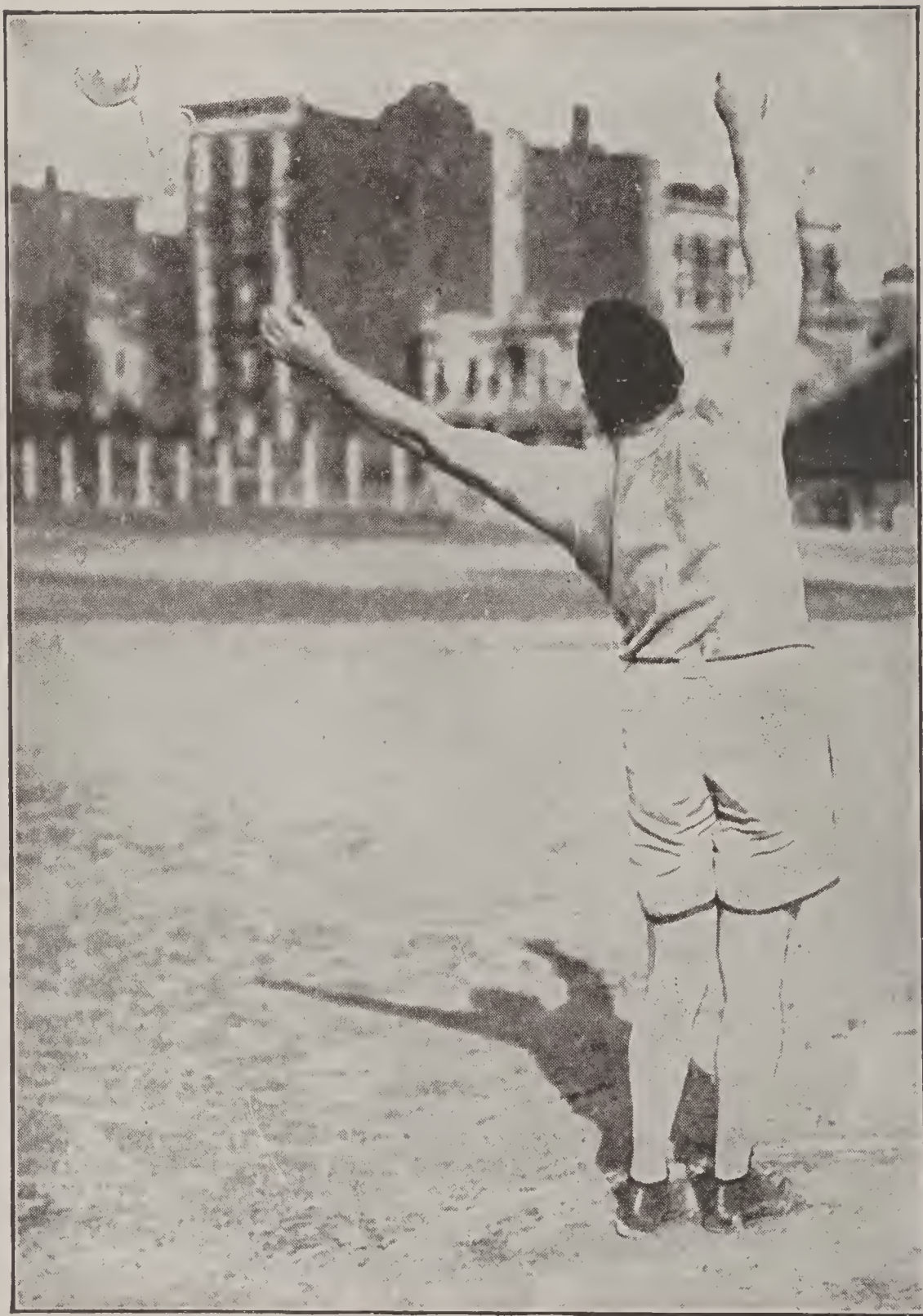
MATT McGRATH.
Swinging around in the first turn of the "56."



MATT McGRATH.
Landing after the first turn in the "56."



MATT McGRATH.
In full swing. Start of the second turn.



MATT McGRATH.

Final position in throwing the "56."

well in front of him before his feet begin to leave the ground for the first turn. At the same time his body should be turning from the hips upward in the direction of the turn. The knees should be slightly bent, so as to impart a little spring to help to throw the body around. It is best to make the first turn as short as a man possibly can and to almost land the feet right behind the stance of the original position. This will give a lot of room for the next two turns and a little leeway to go forward at the spins, for if the thrower cannot go forward his efforts are almost useless. A vital point is to make the slightest pause as the feet touch the ground after the first turn. This will balance the swing and the athlete can tear into the next two like a wild man.

I once heard a college coach tell one of the most promising of his pupils that he should try and make his body always beat the hammer so that he would be in the right position for a heave-off at the finish. The poor college advisor did not know the first rudiments of the sport and he was, for the sake of a bluff, simply killing off whatever ability the innocent student may have possessed. The collegian did leave the hammer behind him and tore himself all over the circle and was so exhausted that he had little or no strength left when he attempted to get a drive at the finish.

It is something not very well known that hammer throwing is a very tiring exercise, much more

so than the 56-pound weight, shot or discus. Therefore, the beginner should be careful of the amount of exercise he should take. When learning, fifteen throws a day will be found to be enough, and when proficient about half that number will do. If he finds that he is fagged out after a practice he may skip a couple of days to rest the muscles. He should watch out for staleness, which steals unawares on a hammer thrower and is a thing very hard to overcome. A man may eat almost any healthy food, but must avoid the victuals that cause biliousness, or cause any great exertion on the stomach during the progress of digestion. On the day of a competition food should be partaken of sparingly and the athlete should feel that his stomach is completely empty during the contest.

Putting the Shot

Putting the shot is a heavyweight exercise that requires a considerable amount of study, adaptability, and quick muscular action. To achieve anything like a respectable distance with the sphere every fibre of the athlete's body must work in unison and the preliminary movements of the put must be so timed and arranged as to lead up to one concentrated effort in the final heave. McDonald and Mucks, leaders in the event at the present day, while somewhat dissimilar in build and style, get the same tremendous drive at the finish, which is the only way to register a big distance. For a young man, then, to become proficient in the event the best plan is to watch one of these performers and copy his style. If he cannot find the opportunity to observe either one of the pair at work some other less prominent performer may serve for a model on whose method the learner could afterward improve. But, should there be none at all to copy, the aspirant will be aided in the cultivation of a proper style by the method suggested here, which is a sort of a composite gleaned from the leading weight putters of the past decade.

The first thing necessary is to learn how to hold the shot in the hand. It may, no doubt, seem rather silly to advise the athlete how a

brass sphere should be properly held, or that it should make any material difference as to what manner the hand should grasp the missile; but it has been clearly demonstrated that several feet can be added to the put by adhering to one particular style.

When the shot is held in the hand, the athlete should not try to grasp it tightly, for in the endeavor to tighten the fingers on the ball the sinews of the wrist are thereby stiffened, and on this account the forearm must necessarily lose a good deal of its accustomed power. The fingers and the palm of the hand should form a cup and the shot should rest comfortably in it, the main portion of the weight falling on the base of the index, middle and ring finger, and the corresponding part of the palm of the hand. The thumb and little finger play no very active part and should not be taxed with any of the weight of the shot and should only serve to prevent it slipping off at either side. When the shot is held as described, the fingers should be kept close together and care should be taken lest the weight slip backward toward the tips, as it is detrimental to the force of the propulsion.

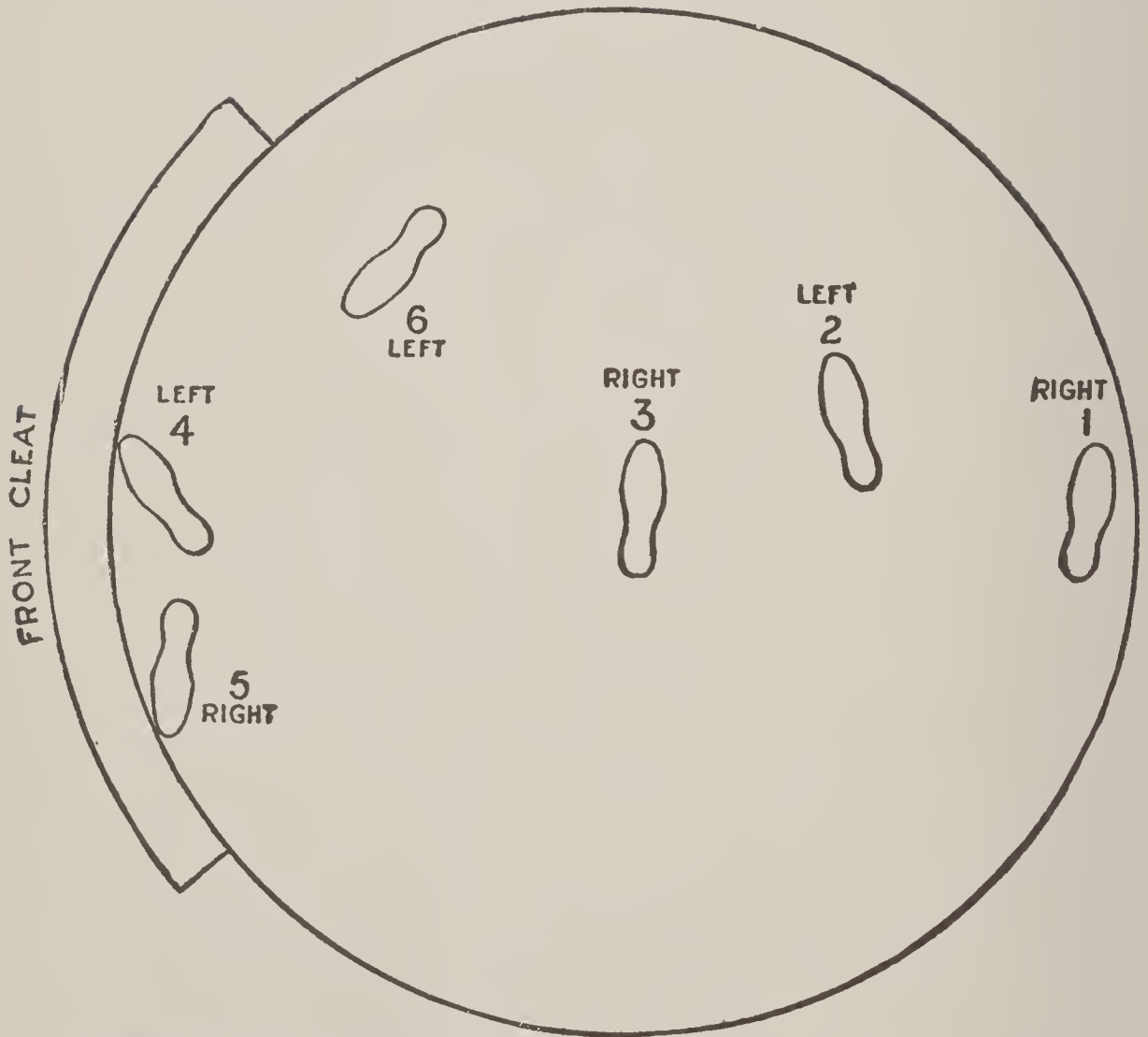
As to the way in which the arm is held when the shot is in hand it is largely a matter of choice, but the best method is to keep the elbow in such a position that the shot rests between the point of the shoulder and the collar bone. Of course a

great many athletes have short arms and cannot do this comfortably, but they should at all times remember to hold the shot as close to the shoulder as possible, with the elbow well in toward the ribs. The nearer the hand is held to the shoulder the greater will be the force found in the final drive; and the further away the shot is held from the shoulder the less power will be found in the muscles of the arm when called upon to propel the weight.

When the athlete finds he can hold the shot satisfactorily, or after the plan described, he should try a few standing puts; that is, with feet about eighteen inches apart. While executing these puts let him remember to swing his body well around to the front before he starts to shoot out his arm, as it is more important to bring the heave of the shoulder into play than the speed with which the arm straightens out. All the time he should put in an upward direction; or the arm when extended to its full length, after the shot has left, should make an angle of about 45 degrees with the body.

As soon as the putter finds he can make the shot travel in a fairly straight line from the standing position, he should then essay the full length of the circle. All the time he should never lose sight of the fact that the motive power for making the weight travel is created by a rapid spring and half turn of the body; that the arm work should be employed only in the final part of the effort.

16-POUND SHOT DIAGRAM



Jump with the right foot from No. 1 to No. 3, bringing the left at No. 4. Then reverse the body, with another jump, bringing the right at No. 3 to No. 5, and swinging the left over to No. 6.

The method for securing the correct position may be partially gleaned from the diagram shown on opposite page. The putter stands at the back of the circle, holds the shot in his left hand, with the right foot on Fig. 1, and the left on Fig. 2. During this preparation the weight should not be removed from the left hand, reserving the right until the moment before commencing the put. After having thoroughly acquired his poise the shot should be passed from the left to the right hand, and without much delay a quick hop is taken to the center of the circle, the right foot landing on Fig. 3, and the left on Fig. 4. Then, with a sharp spring, the legs are reversed and the right half of the body is brought quickly to the front and the arm shoots out with all the power possible to the putter; thus the right foot will be brought to Fig. 5, while the left swings over to Fig. 6, as a balance to keep the body from toppling over the cleat. Any delay made in the center of the circle (Fig. 3) is fatal, and here the right foot should barely touch the ground ere the final spring is accomplished.

To a right-handed putter the main strain falls on the right ankle, and, in order to prevent accidents, it is best to use an elastic stocking or rubber bandage while practicing.

The amount of work each day may be explained in a paragraph. An athlete cannot put often enough until he has learned the knack, but as

he grows proficient the number of puts should be curtailed by degrees. After he has mastered the rudiments of the game an average of about six or eight puts per day, with a little dumbbell exercise in the morning or evening, will be sufficient.

The athlete should at all times put in his best style, standing well up on his toes and with all the dash and fire he is capable of throwing into his movements.

A few vital points to be remembered by the weight putter are:

Don't stoop too low when starting to put.

Don't delay in the hop to the center of the circle.

Always remember to bring the body well around before the arm starts to shoot out.

Always use a brass shot in preference to an iron or lead one.

For Official A. A. U. Rules for all Weight Events, see page 37.

OFFICIAL SPECIFICATIONS FOR 16-POUND SHOT.

Construction.—The shot shall be a brass shell filled with lead, and spherical in shape.

Weight.—The shot shall weigh not less than 16 pounds (7.257 kilograms).

OFFICIAL A. A. U. RULE FOR PUTTING THE SHOT.

RULE XXXVII.—PUTTING THE SHOT.

1. The shot shall be put from the shoulder with one hand only, and it must never be brought behind the shoulder.

2. In the middle of the circumference of the circle, at the front half thereof, shall be placed a stop-board, firmly fastened to the ground. In making his puts, the feet of the competitor may rest against but not on top of this board.

3. A fair put shall be one in which no part of the person of the competitor touches the top of the stop-board, the top of the circle, or the ground outside the circle.

4. The measurement of each put shall be taken at the circle from the nearest mark made by the fall of the shot to the inside of the circumference of the circle on a line from such mark made by the shot to the center of the circle.

5. Foul puts and letting go the shot in making an attempt shall be counted as trial puts without result. It shall also be a foul if the competitor steps on the circle, or leaves the circle before his throw has been marked.

6. Each competitor shall have three trial puts, and the best five shall have three more. Each competitor shall be credited with the best of all his puts.

Training for Shot Putting

BY PAT McDONALD

It is not a very difficult matter to tell how to train for the shot, but it is not very easy for the beginner to imbibe what a seasoned shot putter might advise. Any man around two hundred pounds or so can become a good shot putter if he has a fair amount of strength and gets the correct style at the commencement. What destroys the great majority of weight putters is that they contract a wrong method at the outset, which is almost impossible to remedy. Until the proper style is acquired championship aspirations are hopeless.

The novice wishing to take up shot putting should first of all get a shot of about eighteen pounds, and the reason I favor a shot a little heavier than the sixteen is that it develops the muscles of the back and the shoulders and builds up the legs in wonderful shape. At first the athlete should "put" from stand and learn how to reverse his body, and the one great thing he should always remember is, to bring his body well around before the arm starts to shoot out. This is the movement that will insure every ounce of strength in the arm and legs, and the weight of the body and driving power of the back being put into the "put." Now and again the athlete

may take a few heaves out of the sixteen and he could even have a turn at the twelve, as the change from one to the other will help to make the practice interesting.

As soon as the man finds that he is able to drive the ball well from the stand he should begin to try the full hop across the circle. I may say here that when a man shoots his arm out it should get an upward motion of about 45 degrees. If the arm is shot out any lower the shot will travel too low and no distance worth while will be the result. Then, again, if the athlete drives his arm too high the ball will exhaust itself in the air and it will be just as bad as if it traveled too low. After a while the man will be able to see for himself the correct elevation.

When the athlete begins to take the full measure of the circle he should stand at the back, directly in line with the direction in which he wants to put. He should set himself well, and all the time he should hold the shot in the left hand and until he is ready for the hop, when the shot should be passed to the right hand. There should be the least delay after the ball has been set in the right hand, for if allowed to remain there too long the arm will tire. The manner in which the athlete takes the hop to the center of the ring is important. It should be a good lively swing, not too fast nor too slow. Neither should the putter jump too high, but he should partly scrape

his foot along the ground to the center of the circle. As the right foot lands in the center of the circle, the left should hit the ground plumb against the toe-board. This is the best position to get the drive of the body and the arm at one and the same instant, and when the athlete drives his arm out he should remember to lean with the body as far as he can over the toe-board, as the longer the arm is driving after the shot the further it will go. It is a curious thing what the camera shows: the shot leaves a man's hand before he starts to reverse his body, and, after all, the reverse is only for the purpose of balancing the body to keep it from toppling over the toe-board.

After the shot putter is in shape, a half a dozen puts a day will give sufficient exercise. He should learn to get the best there is in him in six puts, for this is the limit of competition. It is rather a poor plan for an athlete to require a dozen puts before he can get his best, when in the competition he is allowed only three in the preliminary trials. That is one of the reasons why most men do better in practice than in the contest. They never learn to do their best in a few tries.

An athlete may eat anything he fancies when training for the shot, but he should eat very little the day of competition. A couple of chops, tea and toast, about three hours before the competition, will be sufficient.

The 56-Pound Weight

Throwing the 56-pound weight is the one exception in the heavyweight department that requires a substratum of strength before the prospective competitor need reasonably hope for very great distinction. True enough, small and seemingly frail men have accomplished respectable distances, but the individual cases have been rare. Admittedly, it is pre-eminently a pastime for big men. In the old days, when the record was some ten or twelve feet less than it is now, the competitors were more numerous, because the disparity in merit was not so striking, and if a man failed to achieve a long throw his form was not so much behind the champion. The weight was then thrown with one hand from stand without run in follow, and short throws were usually in order, but now the missile is swung twice round with both hands same as the hammer; the throws are longer, and more strength is required, so the different degrees of merit have been consequently forced apace.

Throwing with two turns is more likely to remain the prevailing style for many years to come; therefore, it is only on that style these few hints to beginners are directed.

Many men are deterred from trying the "56" on account of a dread of its being too weighty to whirl around the head. This is a mistake. No

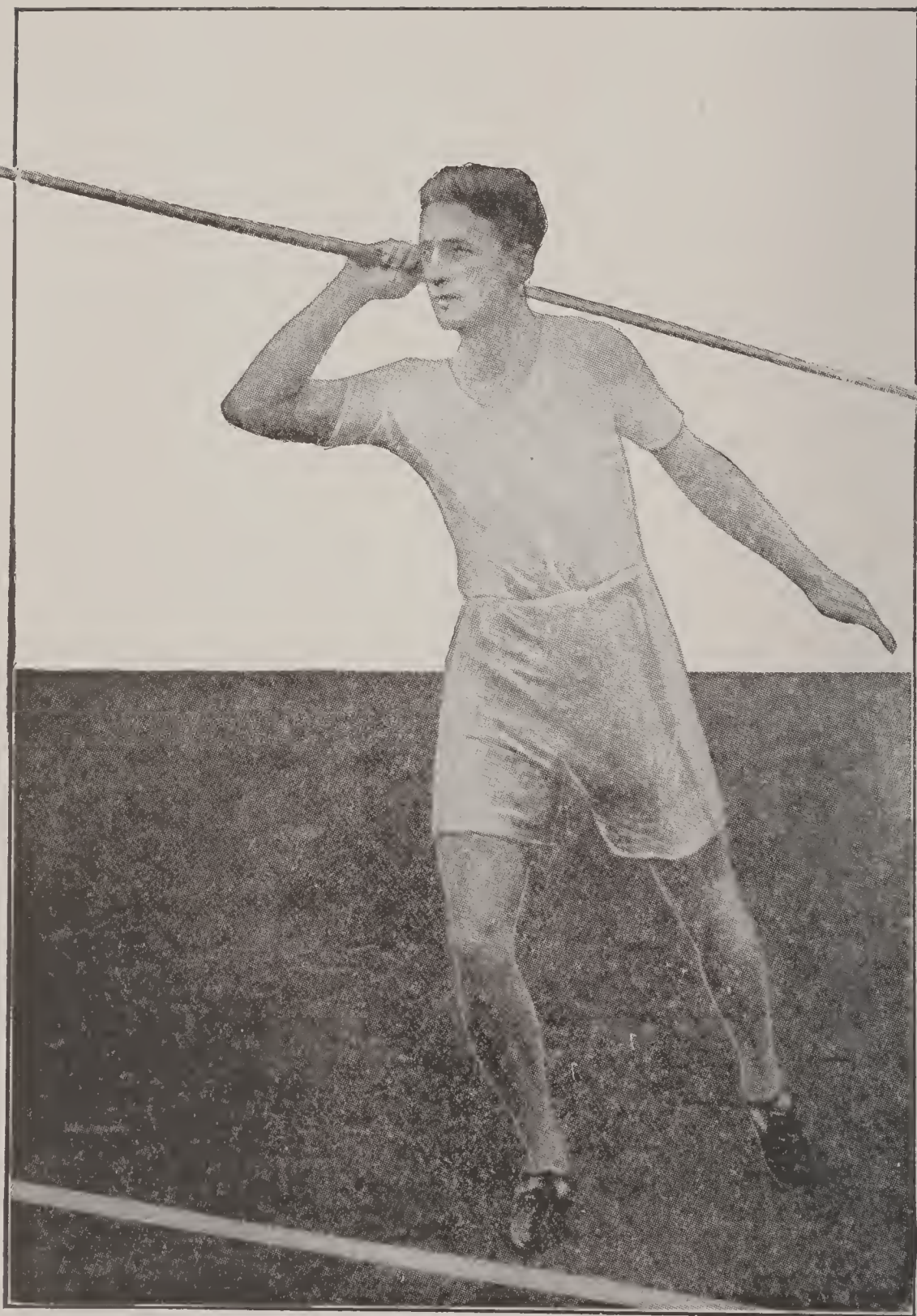
matter how weak the man, he can twist the weight around his head by contracting the muscles of his back, holding his arms rigid, with the weight in hand, but allowing his body to sway slightly from the hips upward.

Quite often some strong-looking man grasps the weight by the crook, tries to whirl it madly round his head and narrowly escapes sweeping his cranium off in the attempt. Had he exercised the least judgment, and resorted to the wrinkle stated, he could have swung the weight around easily and maybe thrown it a fair distance with a trifle of assiduous perseverance. A man need never be afraid of swinging the weight around his head; it is in performing the evolutions of the body afterward that strength is chiefly required. But there is a method of managing the strength, which every man who throws a 56-pound weight should know, and which is absolutely indispensable to a first class performance. To convey this clearly on paper is not a very easy matter, but it is better to begin with the initial movement of the athlete, when he steps up to have his throw.

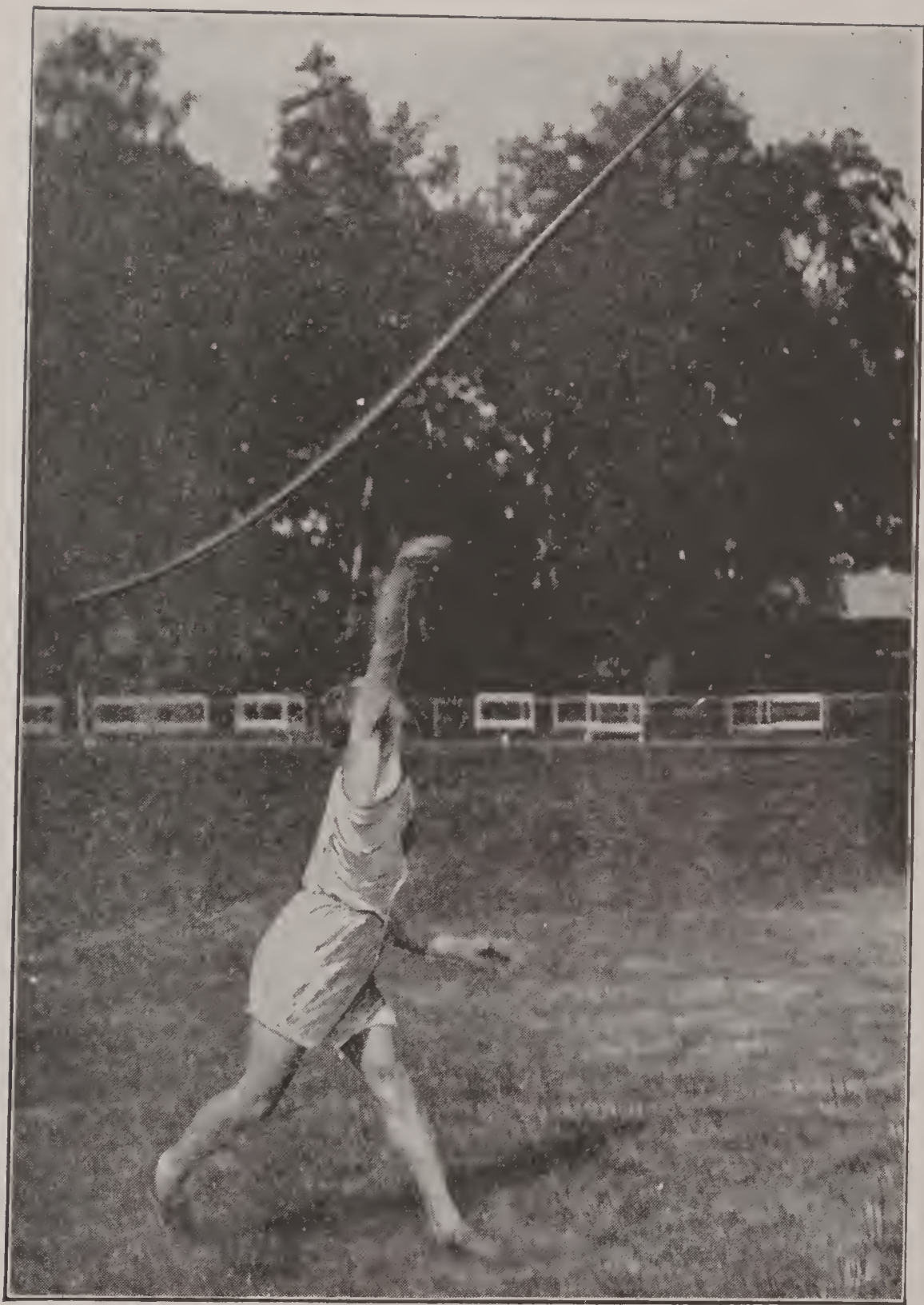
The best method of holding the weight is to grasp the crook with both hands, the thumbs turned toward the body and the backs of the hands facing outward. Many throwers turn the hands in an adverse position—that is, the back of one hand turned outward and the other turned inward; but this is wrong, as it has a contracting effect on the work of the shoulder muscles. The



A. MUCKS,
University of Wisconsin, who set a new discus record,
145 feet 4 1-2 inches.



SAARISTO.
At the start of the run,



SAARISTO.

Rigid position of body immediately after javelin has left the hand. Photograph was taken by Mr. Mitchel at Stockholm, Sweden, in 1912, at the time of the Olympic Games, at 8 o'clock in the evening.



SAARISTO.

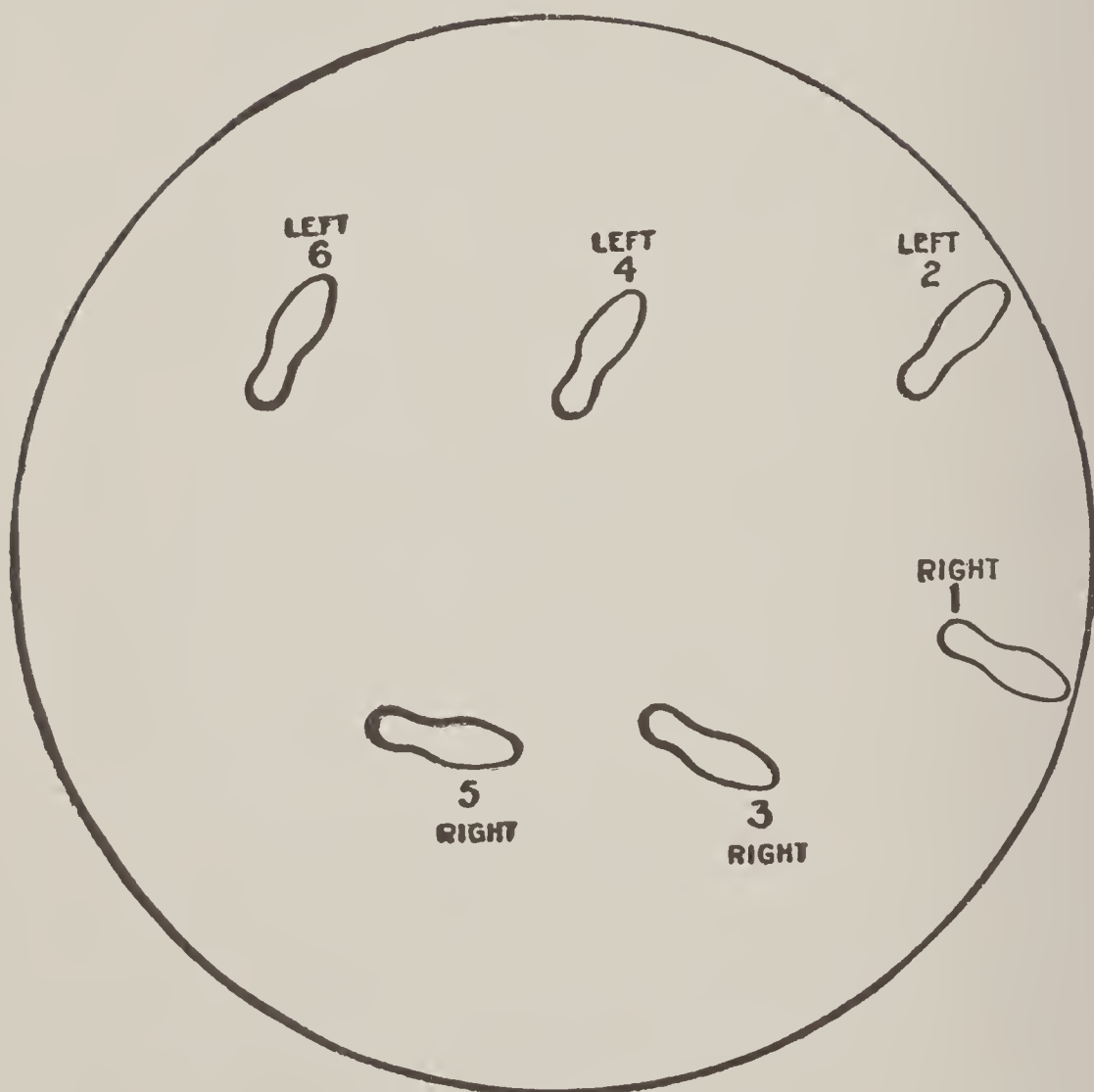
The great Finnish javelin thrower. Showing the wonderful action in his delivery.

bar of the crook should be also roomy, as a narrow one brings the hands too close together and hampers the free movement of the chest muscles when the weight is traveling round the head.

In assuming his position in the circle the thrower should stand at the opposite side from which he intends the weight to fly, with both feet at the edge of the circle, the right on Fig. 1 and the left on Fig. 2, and with the weight of the body partly resting on the left foot; the feet should be about 24 inches apart. The left shoulder should be lowered a little, as it will help the body in the turn when the thrower starts to spin.

As a preliminary move, the thrower should swing the weight between his legs, then back to the right side, and then, with a good, lively, loose swing, once around the head. As the weight descends from behind the right side the toe of the left foot now should be pivoted and a short lunge taken forward, while the right foot is being swished around the left; and the right will be brought over on Fig. 3 and the left on Fig. 4. Without the least delay, another lunge should be taken, the right foot coming to Fig. 5 and the left to Fig. 6. At the same time the athlete should not forget to throw all his force into the final lift or heave of the weight and he should hold himself well together, as an extra bracing of the muscles will keep him from fouling. To attempt to jump clear around with the "56" is foolish, the weight and centrifugal force being too much for

56-POUND WEIGHT DIAGRAM



Swing full around from 1—2 to 3—4, which is the first turn. Then, again swing from 3—4 to 5—6, the second turn.

even the strongest athlete to resist. By executing the pivot on the left foot at the commencement of each turn the right will almost reach its second position before the left leaves the ground. This plan will impart a sort of gliding movement to the limbs and at no time will the two feet be off the ground together.

One may bound clean around with the hammer, but with the "56" it should be avoided. The very best plan to master the "56" is to first practice turning with a 35-pound weight. The amount of work with the weight should not be indulged in as freely as with the hammer, shot or discus, as the strain of the throw more or less lacerates the muscles of the back and stomach and is exceptionally distressing on the diaphragm. About half a dozen throws per day will be sufficient for the most robust candidate.

A man in training for the "56" may eat almost anything he pleases, but he must not bolt his food or use stimulants to excess. He should at all times endeavor to keep his stomach in good order.

For Official A. A. U. Rules for all Weight Events, see page 37.

OFFICIAL SPECIFICATIONS FOR THE HEAVY WEIGHT.

THROWING THE HEAVY WEIGHT (56 LBS. = 25.401 KILOGRAMS).

Head.—The head shall be of molded lead, or a brass shell filled with lead, and spherical in shape, having imbedded a forged steel eye bolt as a means for attaching the handle.

Handle.—The handle shall be made of round iron or steel measuring $\frac{1}{2}$ inch (12.7 millimeters) in diameter, bent in a triangular form, no side of which shall be more than $7\frac{1}{4}$ inches (184.146 millimeters) inside measurement.

Connection.—The handle shall be connected to the head by means of a welded steel link measuring $\frac{3}{8}$ inch (9.525 millimeters) in diameter.

Weight.—The weight shall be not less than 56 pounds (25.401 kilograms) complete as thrown.

Length.—The length shall be not more than 16 inches (406.39 millimeters) complete as thrown.

OFFICIAL A. A. U. RULES FOR THROWING THE HEAVY WEIGHT.

RULE XXXIX.—THROWING THE HEAVY WEIGHT.

1. In making his throw, the competitor may assume any position he chooses and use both hands.

2. Foul throws and letting go the weight in an attempt shall count as trial throws without result.

3. It shall also be a foul if the competitor steps on the circle, or leaves the circle before his throw has been marked.

THROWING FOR DISTANCE.

4. A fair throw shall be one where no part of the body of the competitor touches the top of the circle or the ground outside the circle.

5. The measurement of each throw shall be taken at the circle from the nearest mark made by the fall of any part of the weight or handle to the inside edge of the circumference of the circle on a line from such mark to the center of the circle.

6. Each competitor shall have three trial throws, and the best five shall have three more. Each competitor shall be credited with the best of all his throws.

THROWING FOR HEIGHT.

7. A barrel head 3 feet in diameter shall be suspended horizontally in the air.

8. The Field Judges shall determine the height at which the barrel head shall be fixed at the beginning of the competition, and at each successive elevation.

9. A fair throw shall be one where no part of the body of the competitor touches the ground outside the circle before the weight touches the barrel head, and where any part of the weight or handle touches any part of the barrel head.

10. The measurement of each throw shall be from the ground perpendicularly up to the lowest part of the barrel head.

11. The method of competition shall be the same as in the Running High Jump.

Training for the "56"

BY MATT McGRATH

It is a singular thing that training with the 56-pound weight will strengthen a man more than any other of the heavyweight exercises, that is, provided a man is fairly strong. When I mean fairly strong I mean a man who can catch up a "56," swing around, and throw it some distance without feeling any great strain from the exertion. Weak men, and especially those with defective kidneys, should never bother with the big weight. Perhaps one of the most beneficial exercises with this weight is to swing it between the legs and throw it about a dozen times every day. It has the effect of developing the muscles of the back, loins, thighs and calves, and is nothing short of a tonic to the muscles of the stomach. Every time I go to practice from the circle I always take half a dozen throws from stand between the legs and find it to be even a better muscle builder than throwing with a double turn.

It is no easy matter to master the knack of throwing with the double turn from the 7-foot circle and keep inside the bounds. In swinging around with the weight, the force is such that it has the tendency to carry the thrower too far forward at every movement, and, consequently, if he does not manage himself well he will be

taken over the front of the circle every time. Personally, I find it very hard most of the time to keep from fouling. The best plan to begin with is to make the easiest sort of a turn on the first spin, in fact, if a man does not make an easy turn he might as well drop the weight then and there, walk around and try again. One swing will be found necessary over the head and this should be nice and loose, the weight traveling well behind the head. As the weight is brought around to the front, the body should wear around with it until the ball is nearly half around the body. Then a little hop is taken and the feet should rest well and firmly on the ground after the first turn. The thrower, if he does as suggested here, may tear into the second turn like a tiger, but he should be careful not to jump too far forward, for if he does he will land over the front of the circle. It is a curious thing in connection with the double turns in throwing the "56" that if a man makes the first turn right he is sure to make the second one well inside the circle and get the proper lift-off at the finish, something which should be the aim of every athlete who cares to figure in the championship class. No man need expect to execute the double turn without long and careful practice and a goodly amount of study at the same time. All the men, including myself, who were successful with the double turn had to work diligently to get the knack, which is, of course, the best method of all with the "56."

Learning the "56" double turn is tiptop schooling for the hammer, for it gives the athlete a keen idea of how to balance himself and to get the proper timing to his swings.

When the athlete has learned the double turn he should be careful about the amount of work he should do each day. A dozen throws should be the outside of his session with the weight and it will be found that the physical condition will be improved by letting a day lapse maybe twice a week. If a man stays too long away from his practice he may lose a little of the knack, and if he should be ambitious to improve, strict attention will be found to be the best of all plans. If approaching a public competition, an athlete should not practice for three days previous, allowing that length of time for a good rest of the muscles.

I have been often asked what I eat in training. My answer has been that I eat everything strengthening, and only avoid sweets and pastries of all kinds. On the day of a competition I eat sparingly and generally allow three hours to elapse between my last meal and the time appointed for the contest.

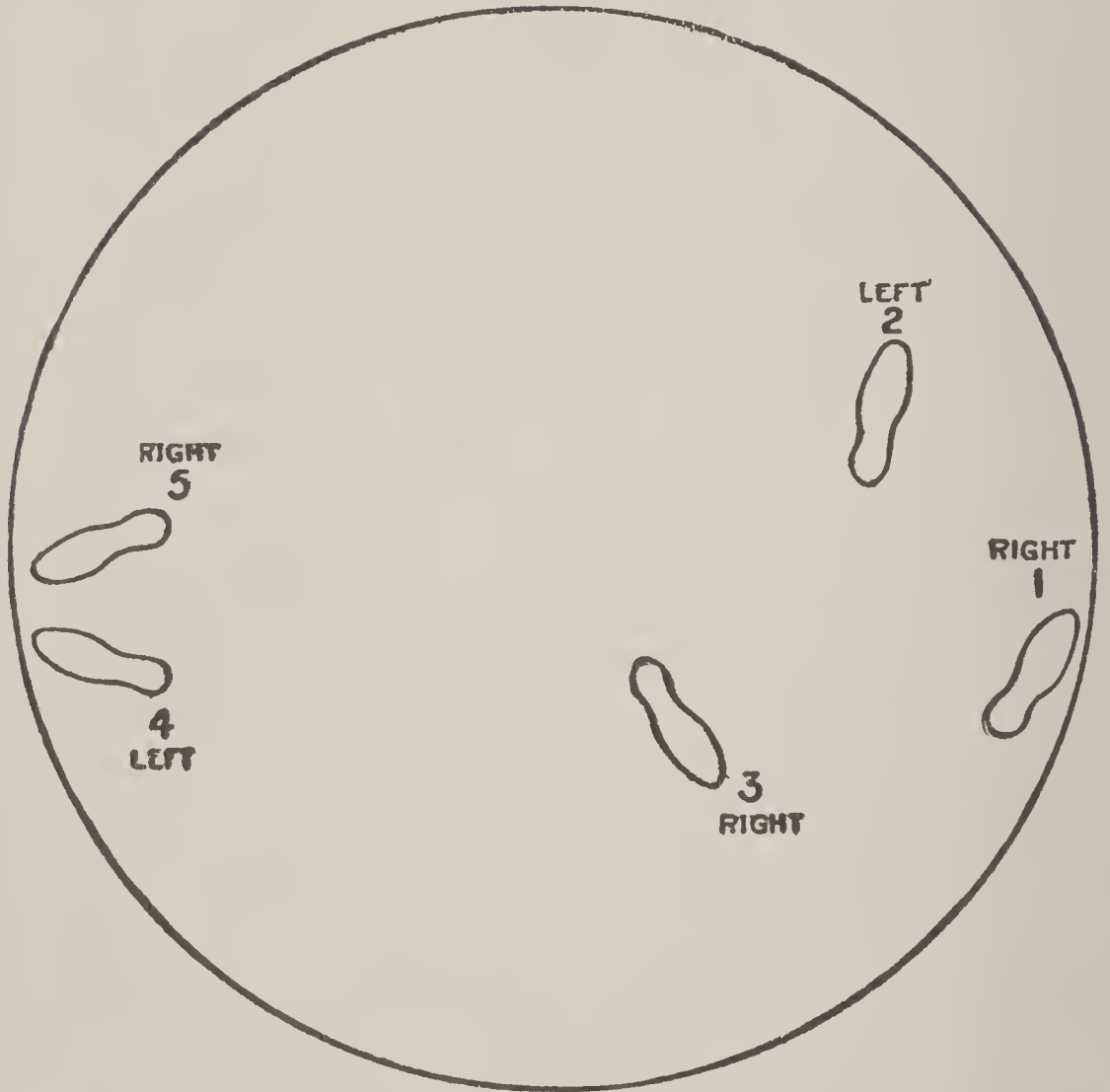
The Discus

The discus, on account of its unwieldy shape, is the most uncertain of the weight events, and the one for which the least amount of muscular power is required. A lithe, wiry, snappy fellow can at all times expect to throw it well, while often a man who is in the front rank with the "56" or hammer may find much trouble in grasping the real knack. He, perhaps, applies his power at the wrong moment and instead of the disc being sent flying away for a big distance it goes whirling in the air and falls to the ground seventy or eighty feet from the circle.

The most vital part of discus throwing is to learn how to scale it and the proper elevation. First of all it is necessary that the athlete should learn to get a proper hold on the implement, as it conduces to a good method of scaling. In holding the discus it should lie flat against the palm of the hand, with the fingers spread out and the tips covering the outer edge. The thumb should be straightened at an angle of about 45 degrees against the convex part, to steady the missile in making the attempt. Some athletes try to grasp the edge of the disc with the foremost joint of the fingers, but this should be avoided, as it hampers the free use of the arm.

After the athlete finds he can hold the discus

DISCUS DIAGRAM



Pivot on the left foot (No. 2), bring the right on No. 1 around to No. 3.
Then pivot again on No. 3, slant the left to No. 4, and without delay, reverse the feet, bringing the right to No. 5.

comfortably he should then try a few standing throws. The stationary position is preferred for gaining a line on the proper scaling method. Each day about a dozen trials should be taken this way, after which about as many more should be tried with a turn.

In the development of the game so far, only one turn is found to be possible from the circle, though, as time wears on, men may develop the double turn with success. To make this turn the athlete should place the right foot on Fig. 1 and the left on Fig. 2. The body should stoop forward somewhat, while the arm holding the discus should be held as far out from the body as possible; and as a preliminary movement before starting to turn, the discus should be swung backward and forward a few times. He should then be standing in the circle with the right foot on Fig. 1 and the left on Fig. 2.

After the thrower has thus gathered a little momentum, he should start to turn by pivoting on the left foot (No. 2), the right being brought around to Fig. 3. Here another pivot should be made and the left foot should land out to the point of the circle, at Fig. 4. Then a quick hop should be taken while the legs are being reversed, the right foot landing on Fig. 5, and as the right shoulder comes forward, the arm should be brought quickly around and the discus sent scaling away.

By following the plan of the diagram the athlete will execute a sort of a waltz step across the circle, which is better than a complete jump around, used by so many unsuccessful discus throwers.

On account of being so light, many athletes are of the impression that the main part of the effort should be contributed by the arm, but this is a mistake, as the more proficient performer relies for a rapid turn of the body, reserving the arm for a final sweep.

Like ball playing or other light exercises, a man can throw the discus all day long without feeling anyway exhausted. At first he cannot throw it too often until he has acquired the proper style, after which about a dozen throws per day will be sufficient.

For Official A. A. U. Rules for all Weight Events, see page 37.

OFFICIAL SPECIFICATIONS FOR THE DISCUS.

THROWING THE DISCUS.

Construction.—The discus shall be composed of a metal rim, permanently attached to a wood body, brass plates set flush into the sides of the wood body and, in the exact center of the discus, a means for securing the correct weight. The brass plates shall be circular in form, having a diameter of not less than 2 inches (50.799 millimeters) nor more than $2\frac{1}{4}$ inches (57.149 millimeters). Each side of the discus shall be a counterpart of the other side and shall have no indentations, projecting points, or sharp edges. The sides shall taper in a straight line from the beginning of the curve of the

rim to a line a distance of not less than 1 inch (25.399 millimeters) from the center of the discus.

Measurements.—The largest dimension shall be a circle not less than $8\frac{5}{8}$ inches (219.07 millimeters) in diameter. The thickness through the exact center, on a line perpendicular to the diameter, shall be not less than $1\frac{3}{4}$ inches (44.449 millimeters). The thickness at 1 inch (25.399 millimeters) from the center shall be exactly the same as at the center. The thickness of the rim at a distance of $\frac{1}{4}$ inch (6.35 millimeters) from the edge shall be not less than $\frac{1}{2}$ inch (12.70 millimeters). The edge shall be rounded on a true circle.

Weight.—The weight of the discus shall be not less than 4 pounds 6.55 ounces (2 kilograms) complete as thrown.

OFFICIAL A. A. U. RULE FOR DISCUS THROWING.

RULE XXXVI.—THROWING THE DISCUS.

1. All throws, to be valid, must fall within a 90 degree sector marked on the ground.
2. It shall be a foul throw if the competitor, after he has stepped into the circle and started to make his throw, touches with any part of his body or clothing the ground outside the circle before the discus strikes the ground. It shall also be a foul if the competitor steps on circle.
3. The measurements of each throw shall be made from the nearest mark made by the fall of the discus to the inside circumference of the circle on a line from such mark made by the discus to the center of the circle.
4. Each competitor shall have three trial throws, and the best five shall have three more. Each competitor shall be credited with the best of all his throws.



G. A. BRONDER, JR.

Holder of American record for throwing the javelin, 190 feet 6 inches.

Photo Newark Sunday Call.



ERIC V. LEMMING.

The famous Swedish javelin thrower shown in the act of releasing the implement.

Weight Throwing for Boys

For the boys who happen to fancy field events the javelin and junior discus are to be recommended above all others. These missiles are so light that the very smallest and weakest boys can indulge in them without the least danger of incurring any strains in the vital parts of the body. To follow those events closely will give the youth all the exercise his physique is able to endure, while at the same time there will be an all-around muscular development which may lead to competition in the heavier weights afterward.

Singularly enough, in ancient days these two events took a place in the medical gymnastics, and were recommended by the physicians as of the greatest benefit to youngsters subject to giddiness or even those of plethoric temperament. Of the two, the javelin is more fancied by the boys, for it is a more fascinating and spectacular exercise. It is highly beneficial, too, for good influence on the upper parts of the body. It develops the thorax and the organs of respiration, and is literally a tonic for boys inclined to show weak lungs and other pulmonary trouble. The position of the body and head and the run to the scratch line to make the throw will not only strengthen the shoulders and chest, but the legs will come in for their share of the development. When exercising with the javelin boys would do well to follow the

advice given in the chapter of "Javelin Throwing" in this book, and to try and imitate as much as possible the style used by Saaristo, the Finnish champion.

One thing a boy should always remember, and that is, the very minute his arm begins to pain him between the elbow and shoulder, it is a signal of distress and he should rest for several days. If his arm is not too bad he may continue, but it is advisable that he should go slow on the amount of daily practice, or else skip a couple of days in the week. The beginner should always remember to bring his arm forward in the throw in a semicircular direction, for then he will be less liable to injure the biceps or to impart a twist to the ligaments of the elbow. It is in this twisting of the elbow that the main danger in throwing the javelin centers, for once a ligament is disturbed in that part of the arm it is liable to give trouble at any moment ever afterward. The youngster should also be mindful not to allow his arm to drop below the level of the shoulder when making his effort, but he may lower the shoulder a little in order to gather himself for the throw. In doing this, the javelin should be held high up or on a level with the top of the head. It is strange that all good throws never hurt the arm, but only the wrong ones that are sure to cause a laceration.

The discus from its *modus operandi* is the less harmful of the two events. With the arm rigid

the young athlete has only to swing round in a sort of waltz step and throw it away. He will do well to pay attention to the diagram in this volume on discus throwing. He should keep a few other points well in mind. One of the most important is that when he finds himself at the front of the circle, about to make the final heave, his arm should be well behind him, so that he will get all the power of the arm and back for a sweeping drive at the finish. Neither should he attempt the final heave until he finds that his left foot has landed at the front of the circle, after which he may reverse the legs with a jump in the air, at the same instant bringing the arm around as quickly as possible.

If at all within his capability the young athlete should throw with an "uppercut" of the arm and not with the round arm so prevalent in America. Taifale, winner of the last Olympic championship, used the "uppercut," and when his discus fell it nearly rested on the identical spot where it first hit the ground. The throws of all the others "skimmed" along the turf for a distance of about fifty feet and that meant so much energy thrown away.

Boys or young men should never attempt to throw the 56-pound weight, 16-pound hammer or 16-pound shot. These are too much of a strain for a young, soft, muscular system, and until the aspirant is well developed he should shun the heavy weights.

Throwing the Javelin

Throwing the javelin, which is now recognized as a standard event the world over, or at least wherever athletics has become popular, ranks as one of the oldest of field contests. In the early days of the Olympic Games it was included in the pentathlon or all-around contest, and, singular to relate, the javelin was pretty much the same in length and weight as the one used to-day. Whatever difference might be unearthed was in the construction of the head or spear. That of the ancients was of bronze and extended halfway up the shaft, which was of dogberry wood and very hard. This latter quality was claimed to be an advantage, the early performers having discovered the secret that the stiffer the handle the smoother and further it flew. How much science these antique theorists had mastered is borne out by the policy of the experts of the present, especially the Finns and Swedes, who are in favor of the real hardwood javelin.

The statement that Sweden originated javelin throwing is erroneous, although it is perhaps true enough that more good exemplars of the game can be found there than in any other country. The reason for the proficiency of the Norsemen is that for about twenty years they had been practicing the exercise and had a big start on the rest of

the world when the competition was suddenly revived in the Olympic Games at Athens in 1906. When the javelin had not yet been seen in Sweden or Norway, other nations, both in ancient and modern times, were showing all sorts of clever stunts with the implement. The Greek language abounds in the description of the various sorts of javelins, pikes and lances, and it is not easy to distinguish between the different varieties. According to Homer, it was with a javelin that Achilles killed Hector under the walls of Troy.

Sometimes the contests in the ancient Panathenian stadium were at a mark, while at others the conditions were for distance, and great feats are credited to some of the ancient warriors. The Romans used a spear about 8 feet 6 inches long, called a pilum, with a thong loop in the center for the purpose of increasing the force of projection. In a tomb at Chiusi there is the carved figure of an Etruscan preparing to hurl his javelin, and on a painted vase in the Louvre there is another figure in the act of throwing, and the javelin has a cord wound around the middle, as is the binding on the javelins of our time.

All the oriental countries encouraged the throwing of the "djerid," which is practically a javelin with a reed handle. Among the Persians, the Arabs and the Turks the game of djerid attained great prominence. Chardin, the celebrated traveler of the seventeenth century, tells of some rare

feats he witnessed with the javelin in parts of Persia. At one of the jousts he saw fifteen young Abyssinians show great skill in throwing the javelin from horseback. Niebuhr, who visited Arabia about the beginning of the eighteenth century, speaks of the marvelous skill of Emir of Loheia, who at full gallop would throw his javelin from the saddle, overtake it in flight, and catch it before it descended.

Clever as the deed of Emir might appear, it falls to mediocrity beside that of Cuhullian, the hero of the Taitin games of ancient Ireland. It is recorded in the annals that his throw of the full-sized javelin taped 100 yards, while he was capable of hurling the small javelin the astonishing length of a quarter of a mile, and that at that point it would slide clean through a human being. Cuhullian carried the small spears in a sheath and used them both for offensive and defensive purposes. It may be that Celtic imagination is stretched a trifle here, but one thing is certain, and that is that javelin throwing was well known to the pre-Christian inhabitants of the Green Isle. This claim is corroborated by the fact that in the old manuscripts compiled about the time of the birth of Christ the word javelin is spelled the same as it is to-day. Extreme historians have it that the word is purely of Gaelic origin.

At the present time the two leaders of the sport are J. J. Saaristo of Finland, winner of the two-

handed contest in the Fifth Olympiad, at Stockholm, where in the right-hand throw he made a world's record of over 200 feet, and Eric V. Lemming of Sweden, thrice winner of the Olympic one-hand title.

While the styles of the pair differ, the main object is similar, that is, to get a smooth, pauseless run to the take-off and such arm action at the delivery as would cause the javelin to travel straight while in the air and without a wobble.

Saaristo's method is the more scientific, and, singularly enough, simpler and more easily copied. It is the one that should appeal to all prospective javelin throwers. When in championship contests the Finn usually takes a run of about sixty feet and at each try travels as straight as a die. He holds the spear in his hand with the palm upward and held above the shoulder, on about a level with the eyes. A remarkable thing in connection with this method is that the throwers of ancient times held the shaft above the shoulder at the same height, their opinion being that the level of the ear or eye was the best plan of all. Before starting to make the effort, Saaristo stands for a few seconds and measures the spot on the scratch line from which he will subsequently make the delivery. He starts away softly and at every stride gathers a trifle more speed. All the time the javelin is held in the same position, with spear tilted upward and slightly turned to-

ward the chest. When within about four strides of the take-off the right shoulder turns backward and slightly drops, while the arm is stretched straight back but not downward. Neither is it stretched to its full extent, a sort of camber being left at the elbow, a position which insures the necessary contraction of the muscles of the forearm and biceps for a powerful forward sweep at the moment of delivery. Instead of lessening the speed of Saaristo, the preparatory movements of the shoulder and arm give him increased momentum in the last few strides, and during these strides he squeezes his fingers on the binding of the javelin. There is no break in the run, and when he makes his effort his left foot hits the turf with a slap, while simultaneously the arm is pulled straight forward in a semicircle and the javelin is driven through the air as if shot from a ballista.

As to the fact of reversing the legs, it is of little or no account to Saaristo, for the javelin is well on its flight when he brings his body around, and this is done only to preserve the balance and keep him from fouling the boundary line. During the Olympic Games at Stockholm, in 1912, the writer photographed Saaristo, the camera showing some very peculiar features of his method. The one printed in this book was taken at 8 o'clock in the evening—in the long twilight of the northern

latitudes—when he was at full tilt in one of his best practice throws. It shows the arm raised to its full height as the javelin leaves it while the body and legs are as rigid as possible. After the javelin is sent on its journey by the Finn it immediately strikes an angle of something like 50 degrees and, a second afterwards, assumes a horizontal position, flying as direct and true as if propelled from the steel barrel of a rifle. The manner in which Saaristo's throw falls to the ground is also peculiar, for when its force is spent in the air it falls down and spears perpendicularly, falling forward instead of in the usual backward manner.

Lemming, who is much larger, heavier, and more rangy than Saaristo, has a style hard to be copied. He starts off with as smooth a run as does the Finn and goes to the scratch line with the same increasing swiftness, but a curious complication arises as he begins to gather himself for the throw. When almost at the top speed, and within three strides of the scratch, he takes a sort of hop-skip sidestep and brings the left leg in behind the body, the right shoulder being thrown half around. He holds the javelin a little lower down behind than Saaristo, but he gets the same smooth, uninterrupted delivery, and the javelin travels without a wriggle in the air. The javelin is on its way before he starts to reverse his legs.

The moving pictures of the javelin event at the Stockholm Olympiad showed the variations in style between the Finn and the Swede, and gave rise to a number of queries as to which style was the most to be recommended and why Lemming made the sort of sidestep when about to set himself for the throw. The writer advised the method shown by Saaristo, as it was well nigh perfection. One day, in the athletic grounds at the back of the Stadium in Stockholm, the writer asked Lemming why he executed the intricate and apparently useless motion of the sidestep just as he was about to throw. He answered that it felt as if it gave him more speed at the moment of delivery and that by sidestepping he had no trouble in throwing his shoulder around for the final drive.

An athlete with ambitions to become a javelin thrower should first of all learn to hold it in the correct position. Freak theories and new-fangled ideas are out of order in grasping the binding of the javelin. There is only one way and that is the way in vogue among the best throwers in the world. The javelin should rest slantways across the palm of the hand, the upper edge of the binding being grasped between the second joint of the forefinger and the extreme joint of the thumb; the other fingers should lap across the binding to about the second joint. Any man who has ever thrown a base ball or cricket ball or, in fact, anything light, knows that the main part of the

momentum of the throw is contributed by the index finger and thumb. So it is in the javelin. The amount of tension placed upon the fingers is another important point. During the early part of the run the javelin should be held softly, but the position in the palm of the hand should be correct. In the last few strides, however, before the execution of the throw, the fingers should tighten on the binding, so that the shaft may be driven away with all the power of the fingers. To hold the fingers tight from the start of the run is a bad plan, for it cramps them and at all times leads to some mistake or other. Either the javelin travels outward or the thrower's run is such that he tries to gather himself too much and stops at the delivery.

In America very little attention is paid to the position of the binding on the handle, yet it is one of the vital things which the athlete should remember, and should have the binding shifted to suit himself. Some men have longer arms than others, and what might suit the short-armed man might be all wrong for the long-armed thrower. The best plan is for a man to move the binding up and down the shaft until he finds the balance that suits him best. For this reason he should possess his own javelin and take it to whatever competitions he enters. The athlete should at all times keep it in mind to hold the javelin with the hand level with his ear and above the shoulder.

The binding should begin about an inch above the point where the javelin balances.

The length of the run is an item which should be studied, and it is only after a man has been practicing for some time that he will learn whether a long run or a short run is to his liking. For all-around purposes then, all beginners should try 25 yards. If a man thinks he needs more, he should try, but on the whole it will be found that a thrower will be able to gather force enough for the hardest sort of an effort after a run of from 20 to 25 yards. Both Saaristo and Lemming take runs of about the latter distance.

When the athlete begins to train he should never attempt to throw with a run, for he may acquire some bad style from which he could not easily rid himself afterward, and anyway the run will do him no good. He should commence by standing at the scratch line and throwing from stand. Distance should not be the object, but the acquisition of the correct style. The tyro should do his best at every try and endeavor to send the javelin away as straight as possible, with the arm action much the same as if he were throwing with a run. Now and again he could take one step backward and change legs to accustom himself to the reverse.

At the outset the athlete should not throw too much, as he is likely to develop what the base ball player terms a "glass arm," the part most liable

to be affected being the ligament of the elbow, and once this is lacerated the novice should immediately give it a rest. A preventative of any rupture of the cartilage is to wear an elastic affair like a stocking. It will hold the muscles tight and keep the cartilage in its place, no matter what twist or strain it undergoes.

At first a dozen throws will be found to be enough, but as the work progresses the number of throws can be increased. By the time the thrower finds he has mastered the art of throwing well enough to take the run, fifty throws per day will not be found to be overdoing the exercise. In fact, an athlete could throw almost the entire day and not feel as tired as if he put in a half an hour at throwing the hammer or 56-pound weight.

Although seemingly unnecessary to care for the javelin, it is well worth while that it receive some consideration. When not in use it should be hung up against the wall with a loop of cord, spear upward, and now and again it should be oiled to keep it from warping. In competition the athlete should never hold the javelin too long in the middle, for no matter how good the wood is it will "belly" a little, and when that happens it will not fly true, but is sure to wobble in the air to one side or the other. Often an athletic implement is blamed for the unrealized ambitions of a contestant when, as a matter of fact, the

lack of the little attentions that make the smoothness of the perfect machine may have spelled the difference between defeat and victory.

There are a few things which the athlete should always keep before his mind in a javelin contest: He should always run easy at first and straight to the take-off and put in his greatest force in the last three strides, without a pause or break. Above all he should concentrate his mind on his task. Concentration is just as important in efforts that apparently require only mere strength as in the more subtle games of skill that do not call for physical endurance.

OFFICIAL SPECIFICATIONS FOR JAVELIN.

THROWING THE JAVELIN.

Construction.—The javelin shall be of wood with a sharp iron or steel point. The javelin shall be constructed in such way that the space between the foremost point and the center of gravity is not longer than 1.203 yards (110 centimeters), or shorter than 2.953 feet (90 centimeters).

Grip.—It shall have, about the center of gravity, a grip formed by a binding 6.3 inches (16 centimeters) broad, of whipcord, without thongs or notches in the shaft, and shall have no other holding than the above mentioned binding, whose circumference at either edge shall not exceed the circumference of the shaft by more than 0.984 inch (25 millimeters).

Measurements.—The length shall be not less than 8 feet $6\frac{3}{8}$ inches (260 centimeters) complete as thrown.

Weight.—The weight shall be not less than 1.76 pounds (800 grammes) complete as thrown.

OFFICIAL A. A. U. RULE FOR JAVELIN THROWING.

JAVELIN THROWING.

1. The throwing shall take place from behind a scratch line properly marked, which shall be a board $2\frac{3}{4}$ inches (7 centimeters) in width and 12 feet (3.66 meters) in length, sunk flush with the ground.

2. The javelin must be held by the grip, and no other method of holding is admissible.

3. No throw shall be counted in which the point of the javelin does not strike the ground before any part of the shaft.

4. The throw is measured from the point at which the point of the javelin first strikes the ground to the scratch line or the scratch line produced.

5. Each competitor shall have three trial throws, and the best five shall have three more. Each competitor shall be credited with the best of all his throws.

6. The thrower must not place his foot or feet upon the board.

7. In javelin throwing the competitor must not cross the line until his throw has been marked.

8. In throwing the javelin, if the javelin breaks while in the air, it shall not count as a trial.

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No. 16BH. Spalding "Official Olympic" Brass Shell Head 16 lb. Hammer (Pat'd Aug. 20, 1912), including patented ball-bearing swivel. Supplied regularly with double triangle wire grip (Pat'd Dec. 22, 1914). Each, \$10.00

No. 12BH. 12-lb. Brass Shell Head Hammer, otherwise same as No. 16BH. Each, \$9.00



No. 16IHB. 16-lb. Solid Iron Head Hammer, including patented ball-bearing swivel, double triangle wire grip. Each, \$4.50

No. 12IHB. 12-lb. Solid Iron Head Hammer, otherwise same as No. 16IHB.

Each, \$4.00

No. 8IH. 8-lb. Solid Iron Head Hammer, without ball-bearing swivel. Double triangle grip. Ea., \$3.00

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No. MG

No. MG. Single Grip Style. Used by many prominent hammer throwers. Supplied separately with wire handles. Each, \$2.00

No. FH. Double Triangle Grip, complete with wire handle, furnished separately. Each, 75c.

Any regular Spalding Hammer listed above furnished with No. MG grip instead of double triangle style, on special order, at an extra charge of \$1.25

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No. L. Leather Case, to hold either 12 or 16-lb. hammer. . . . Each, \$3.00

Spalding "Official Olympic" Circles



No. 9. 7 Foot Diameter Circle. The shot and weights are thrown from this size circle. Three sections, band iron, painted white. . . Each, \$10.00

No. 19. 8 Foot 2 inch Diameter Circle. For throwing Discus. Three sections, band iron, painted white. Each, \$10.00

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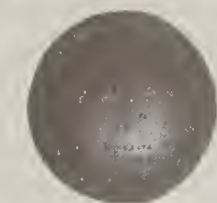
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No. 16BS.	Spalding "Official Olympic" Brass Shell Shot.	16-lb.	
	(Patented August 20, 1912).	Each,	\$9.00
No. 12BS.	12-lb. Brass Shell.	"	7.50
No. 16IS.	16-lb. Solid Iron.	"	1.75
No. 12IS.	12-lb. Solid Iron.	"	1.50
No. 24LS.	24-lb. Solid Lead.	"	9.00
No. 24IS.	24-lb. Solid Iron.	"	5.00
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No. 2. Used and endorsed by all weight throwers. Lead.
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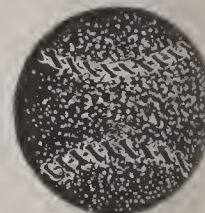
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Method of construction prevents loss of weight even when used constantly.

No. 3.	12-lb. Leather covered.	Each,	\$8.00
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Spalding Athletic Implements are best—First, because we have decided that no trouble or expense will be spared in their manufacture. Second, because we really know how to make them to give best results, and Third, because we have the special skilled workman and the machinery, tools, etc., necessary in the manufacture of special implements of this description.

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This is a duplicate of the original
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1914, and which was so favorably
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No. 5. Spalding "Official Olympic"
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SPECIAL NOTE—Specifications in the Official Rules covering Javelin throwing are such
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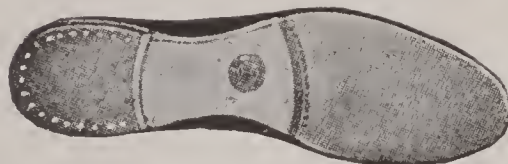
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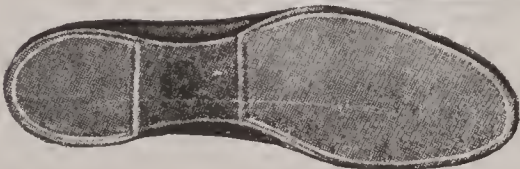
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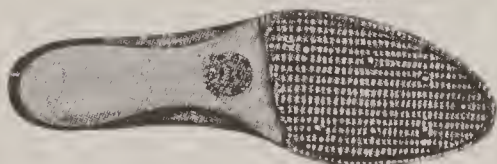
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No. 12. Leather, good quality, complete with spikes. Sizes 12 to 5 only. Pair, \$3.00

Cork Athletic Grips

No. 2. Best quality cork, with elastic bands. Pair, 20c.
No. 1. Selected cork, shaped. 15c.

Keep the uppers of all running shoes soft and pliable by using Spalding "Dri-Foot." It will greatly add to the wear of shoes. . . . Can, 10c.



The prices printed in italics opposite items marked with ★ will be quoted only on orders for one-half dozen or more at one time. Quantity prices NOT allowed on items NOT marked with ★

PROMPT ATTENTION GIVEN TO
ANY COMMUNICATIONS
ADDRESSED TO US

A. G. SPALDING & BROS.
STORES IN ALL LARGE CITIES

FOR COMPLETE LIST OF STORES
SEE INSIDE FRONT COVER
OF THIS BOOK

Prices in effect July 5, 1946. Subject to change without notice. For Canadian prices see special Canadian Catalogue.

STANDARD QUALITY

An article that is universally given the appellation "Standard" is thereby conceded to be the Criterion, to which are compared all other things of a similar nature. For instance, the Gold Dollar of the United States is the Standard unit of currency, because it must legally contain a specific proportion of pure gold, and the fact of its being Genuine is guaranteed by the Government Stamp thereon. As a protection to the users of this currency against counterfeiting and other tricks, considerable money is expended in maintaining a Secret Service Bureau of Experts. Under the law, citizen manufacturers must depend to a great extent upon Trade-Marks and similar devices to protect themselves against counterfeit products—without the aid of "Government Detectives" or "Public Opinion" to assist them.

Consequently the "Consumer's Protection" against misrepresentation and "inferior quality" rests entirely upon the integrity and responsibility of the "Manufacturer."

A. G. Spalding & Bros. have, by their rigorous attention to "Quality," for forty years, caused their Trade-Mark to become known throughout the world as a Guarantee of Quality as dependable in their field as the U. S. Currency is in its field.

The necessity of upholding the guarantee of the Spalding Trade-Mark and maintaining the Standard Quality of their Athletic Goods, is, therefore, as obvious as is the necessity of the Government in maintaining a Standard Currency.

Thus each consumer is not only insuring himself but also protecting other consumers when he assists a Reliable Manufacturer in upholding his Trade-Mark and all that it stands for. Therefore, we urge all users of our Athletic Goods to assist us in maintaining the Spalding Standard of Excellence, by insisting that our Trade-Mark be plainly stamped on all athletic goods which they buy, because without this precaution our best efforts towards maintaining Standard Quality and preventing fraudulent substitution will be ineffectual.

Manufacturers of Standard Articles invariably suffer the reputation of being high-priced, and this sentiment is fostered and emphasized by makers of "inferior goods," with whom low prices are the main consideration.

A manufacturer of recognized Standard Goods, with a reputation to uphold and a guarantee to protect, must necessarily have higher prices than a manufacturer of cheap goods, whose idea of and basis of a claim for Standard Quality depends principally upon the eloquence of the salesman.

We know from experience that there is no quicksand more unstable than cheap quality—and we avoid this quicksand by Standard Quality.

A. G. Spalding & Bros.

STANDARD POLICY

A Standard Quality must be inseparably linked to a Standard Policy.

Without a definite and Standard Mercantile Policy, it is impossible for a Manufacturer to long maintain a Standard Quality.

To market his goods through the jobber, a manufacturer must provide a profit for the jobber as well as for the retail dealer. To meet these conditions of Dual Profits, the manufacturer is obliged to set a proportionately high list price on his goods to the consumer.

To enable the glib salesman, when booking his orders, to figure out attractive profits to both the jobber and retailer, these high list prices are absolutely essential; but their real purpose will have been served when the manufacturer has secured his order from the jobber, and the jobber has secured his order from the retailer.

However, these deceptive high list prices are not fair to the consumer, who does not, and, in reality, is not ever expected to pay these fancy list prices.

When the season opens for the sale of such goods with their misleading but alluring high list prices, the retailer begins to realize his responsibilities, and grapples with the situation as best he can, by offering "special discounts," which vary with local trade conditions.

Under this system of merchandising, the profits to both the manufacturer and the jobber are assured; but as there is no stability maintained in the prices to the consumer, the keen competition amongst the local dealers invariably leads to a demoralized cutting of prices by which the profits of the retailer are practically eliminated.

This demoralization always reacts on the manufacturer. The jobber insists on lower, and still lower, prices. The manufacturer, in his turn, meets this demand for the lowering of prices by the only way open to him, viz. the cheapening and degrading of the quality of his product.

The foregoing conditions became so intolerable that, 17 years ago, in 1899, A. G. Spalding & Bros. determined to rectify this demoralization in the Athletic Goods Trade and inaugurated what has since become known as "The Spalding Policy."

The "Spalding Policy" eliminates the jobber entirely, so far as Spalding Goods are concerned, and the retail dealer secures the supply of Spalding Athletic Goods direct from the manufacturer by which the retail dealer is assured a fair, legitimate and certain profit on all Spalding Athletic Goods, and the consumer is assured a Standard Quality and is protected from imposition.

The "Spalding Policy" is decidedly for the interest and protection of the users of Athletic Goods, and acts in two ways:

FIRST The user is assured of genuine Official Standard Athletic Goods.

SECOND As manufacturers, we can proceed with confidence in purchasing at the proper time, the very best raw materials required in the manufacture of our various goods, well ahead of their respective seasons and thus enable us to produce the necessary quantity and absolutely maintain the Spalding Standard of Quality.

All retail dealers handling Spalding Athletic Goods are requested to supply consumers at our regular printed catalogue prices—neither more nor less—the same prices that similar goods are sold for in our New York, Chicago and other stores.

All Spalding dealers, as well as users of Spalding Athletic Goods, are treated exactly alike, and no special rebates or discriminations are allowed to anyone.

Thus, briefly, is the "Spalding Policy," which has already been in successful operation for the past 17 years, and will be indefinitely continued.

In other words, "The Spalding Policy" is a "square deal" for everybody.

A. G. SPALDING & BROS.

SPALDING'S

ATHLETIC LIBRARY

A separate book covers every Athletic Sport
and is Official and Standard
Price 10 cents each

GRAND PRIZE



GRAND PRIX



ST. LOUIS, 1904

PARIS, 1900

SPALDING ATHLETIC GOODS

ARE THE STANDARD OF THE WORLD

A. G. SPALDING & BROS.

MAINTAIN WHOLESALE and RETAIL STORES in the FOLLOWING CITIES

NEW YORK	CHICAGO	ST. LOUIS
BOSTON	MILWAUKEE	KANSAS CITY
PHILADELPHIA	DETROIT	SAN FRANCISCO
NEWARK	CINCINNATI	LOS ANGELES
ALBANY	CLEVELAND	SEATTLE
BUFFALO	COLUMBUS	SALT LAKE CITY
SYRACUSE	ROCHESTER	INDIANAPOLIS
BALTIMORE	WASHINGTON	PITTSBURGH
LONDON, ENGLAND		MINNEAPOLIS
		ATLANTA
LIVERPOOL, ENGLAND		ST. PAUL
		LOUISVILLE
BIRMINGHAM, ENGLAND		DENVER
MANCHESTER, ENGLAND		NEW ORLEANS
		DALLAS
BRISTOL, ENGLAND		MONTREAL, CANADA
		TORONTO, CANADA
EDINBURGH, SCOTLAND		PARIS, FRANCE
GLASGOW, SCOTLAND		SYDNEY, AUSTRALIA

Factories owned and operated by A. G. Spalding & Bros. and where all of Spalding's Trade-Marked Athletic Goods are made are located in the following cities:

NEW YORK	CHICAGO	SAN FRANCISCO	CHICOPEE, MASS.
BROOKLYN	BOSTON	PHILADELPHIA	LONDON, ENG.



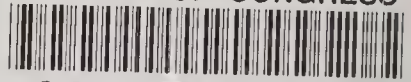


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